

REPORT  
ON THE  
AGRICULTURAL INSTRUCTION ACT  
1918-1919

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OTTAWA  
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PRINTER TO THE KING'S MOST EXCELLENT MAJESTY  
1920







OTTAWA, September 30, 1919.

To the Hon. S. F. TOLMIE,  
Minister of Agriculture,  
Ottawa.

SIR,—I have the honour to present herewith the report on the Agricultural Instruction Act for the year 1918-19, dealing with the work carried on during the year by provincial departments of Agriculture and Education with the moneys assigned to them under the said Act.

I have the honour to be, sir,  
Your obedient servant,

J. H. GRISDALE,  
*Deputy Minister and Acting Commissioner.*



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# REPORT

## ON THE

# AGRICULTURAL INSTRUCTION ACT

### FOR THE FISCAL YEAR 1918-19.

*Tabled in pursuance of Section 8 of the above named Act.*

#### INTRODUCTION.

The total grant for the fiscal year 1918-19, provided under the Agricultural Instruction Act to assist the provinces to carry on educational and instructional work for the benefit of agriculture, amounted to the sum of \$1,100,000. The maximum had been attained in the previous year, and will there remain until the completion of the period contemplated by the Act in 1923.

According to the terms of the Act, agreements with the provinces were entered into which defined the purposes for which the grants for the year should be expended. The schedules allocating the moneys, as embodied in the several agreements, are given below.

The following is a summarized statement of the amounts actually expended during the year under the divisions of work to which the grant was applied:—

Agricultural colleges and schools.. . . .	\$282,851
Instruction and demonstration.. . . .	621,450
Women's work.. . . .	27,047
Elementary agricultural education (including school fairs in part)..	163,647
Boys' and girls' clubs.. . . .	15,556
Veterinary colleges (including special vote in Quebec agreement)..	25,000

While the above constitute the main divisions under which the grant was expended, a summary of this kind is, necessarily, somewhat arbitrary. Because of the differences of procedure in different provinces, the fields of work, and consequently the allotments, are inter-related in various ways. Particularly between the divisions "Agricultural Colleges and Schools" and "Instruction and Demonstration" is it difficult to make a clear distinction. For example, the sum set aside for "Agricultural Colleges and Schools" is not expended in all cases for the exclusive benefit of those institutions, but has a far more extended application. Thus it will be found that the contribution to those institutions is used not only in strengthening the staffs of teachers and to meet the cost of research work and special investigations into agricultural affairs, it is also used in some instances to provide additional building accommodation and equipment, or to establish schools of agriculture, such as that at Kemptville, Ont.; to aid the agricultural schools in Alberta, and to carry on special courses and extension work generally, both among children and adults. From this it will be realized that a part of the allotment is used in promoting work of an instructional and demonstrational character, usually referred to as college extension, so that part of the allotment belongs, strictly speaking, to the "Instruction and Demonstration" division of the grant.

The colleges and schools benefiting from the grant are the Ontario Agricultural College, Guelph; the Agricultural School at Kemptville, Ont.; the Macdonald College,



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and the schools of Agriculture at Oka and Ste. Anne de la Pocatière in the province of Quebec; the College of Agriculture of the University of Saskatchewan; the Agricultural schools at Claresholm, Olds and Vermilion in the province of Alberta and the College of Agriculture in the province of British Columbia.

The allotment for "Instruction and Demonstration" bears either the whole or a large proportion of the cost of maintaining the agricultural representatives and their offices. These are the local resident agents of the provincial agricultural departments, and usually their work is related to most of the departmental activities which are not administrative in character. Among the customary activities of these officers may be included short courses, boys' and girls' clubs, school fairs, and many other undertakings. In addition, the instruction and demonstration item includes special propaganda, undertaken by agricultural departments, for the promotion of better farming, demonstrations in fruit-growing, poultry and bee-keeping, co-operative marketing, field husbandry, dairying and live stock.

"Women's Work", which includes household science, hygiene, home-making, dressmaking, and home nursing, is assisted in the majority of the provinces through the women's institutes or equivalent organizations. Besides the supervision of these organizations, lecturers and demonstrators attend gatherings of women from rural communities and spread among them a knowledge of better methods for the conduct of household affairs, work that might also come in a broad sense under the general classification of "Instruction and Demonstration."

The allotment to "Elementary Agricultural Education" is employed in various ways to extend agricultural teaching in the rural schools. It also assists in the very necessary function of enabling teachers to qualify for giving such forms of instruction, in remunerating teachers for this class of work and in providing equipment and supplies incidental to it. It is employed in connection with the school and home garden and the school fair movement, and in some instances promotes the teaching of agriculture and household science, including cooking and sewing, in high schools, collegiate institutes and similar institutions, from whence the supply of teachers is drawn for the rural community.

The allotment to veterinary colleges is for the purpose of assisting institutions qualifying young men for the veterinary profession. Two such institutions participate, the Ontario Veterinary College, and the School of Veterinary Science at Montreal.

The above will serve to indicate briefly the wide range of work by means of which the Agricultural Instruction Act assists in promoting the welfare of that portion of the community which is associated with the country's greatest basic industry—agriculture. A more comprehensive review of the work for the year will be found in the main body of the report.

#### ALLOCATION OF AGRICULTURAL INSTRUCTION GRANT OF 1918-19.

The grants made to the provinces by the Government of Canada under the Agricultural Instruction Act for the fiscal year 1918-19 are herewith given:—

Province.	Amount.
Ontario.. . . .	\$ 336,303 26
Quebec.. . . .	271,113 76
Nova Scotia.. . . .	81,716 69
New Brunswick.. . . .	64,110 80
Prince Edward Island.. . . .	31,749 22
British Columbia.. . . .	69,199 06
Manitoba.. . . .	77,113 11
Saskatchewan.. . . .	81,728 48
Alberta.. . . .	66,965 62
Veterinary colleges.. . . .	20,000 00
Total.. . . .	<u>\$1,100,000 00</u>



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ONTARIO.

AGRICULTURAL COLLEGES AND SCHOOLS.

Ontario Agricultural College—

(a) Buildings, equipment and furnishings (re grant—payment deferred) . . . . .	\$135,000	
(b) Salaries and expenses, additions to staff, maintenance . . . . .	15,000	\$150,000 00

Agricultural School and Farm—

(a) Capital expenditure (payment of \$40,000 deferred) . . . . .	\$ 60,000	
(b) Maintenance, purchase of stock, machinery, repairs, services, expenses and equipment . . . . .	20,000	80,000 00

INSTRUCTION AND DEMONSTRATIONS.

Agricultural representatives, including clerical and other assistance in connection with the administration . . . . .	20,000 00
Extension work in household science in rural communities . . . . .	1,500 00
Co-operation and markets, educational work in connection with the marketing of farm products, including organization of co-operative societies . . . . .	7,000 00
Demonstration and instruction in vegetable growing . . . . .	7,500 00
Stock and seed judging short courses and institute lectures . . . . .	692 97
Women's institute work, including courses in cooking, sewing, etc. . . . .	5,000 00
O.A.C. short courses for winners of acre—profit and live stock competitions, including travelling and living expenses . . . . .	2,000 00
Lectures in horticulture . . . . .	500 00
Demonstration in growing and handling fruit . . . . .	2,000 00
Demonstration with vegetables and hardy fruits in New Ontario . . . . .	4,500 00
Vineland Horticultural Experiment Station experimental work . . . . .	2,000 00
Drainage work . . . . .	2,500 00
Demonstration work on soils . . . . .	3,500 00
Beekeeping . . . . .	500 00
Instruction and special educational work in growing and hauling corn . . . . .	3,500 00
Instruction and demonstration with live stock and poultry . . . . .	2,000 00

ELEMENTARY AGRICULTURAL EDUCATION.

To provide for and to encourage the teaching of agriculture, manual training as applied to work on the farm, and domestic science in high, public, separate and continuation schools, and in universities, to be available for grants, services, expenses and equipment, and travelling and living expenses of teachers, inspectors and others in attendance at short courses, or other educational gatherings, and to be paid out on the recommendation of the Department of Education . . . . .

40,000 00

Total . . . . . \$336,303 26

QUEBEC.

COLLEGES AND SCHOOLS OF AGRICULTURE.

Grants and allowances—

Macdonald College, School of Agriculture, Ste. Anne de la Pocatière, Oka Institute . . . . .	\$75,000 00
School of Veterinary Science—building extension . . . . .	5,000 00

INSTRUCTION AND DEMONSTRATION.

Animal husbandry . . . . .	9,000 00
Poultry husbandry . . . . .	18,000 00
Horticulture and entomological work . . . . .	31,000 00
Experimental and demonstration orchards . . . . .	4,000 00
Dairying—educational work in cheese and butter-making . . . . .	5,000 00
Agricultural representatives . . . . .	67,000 00
Seed selection, clover plots and demonstrations . . . . .	9,000 00



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## QUEBEC—Continued.

## INSTRUCTION AND DEMONSTRATION—Continued.

Bee-keeping—educational work.. . . .	7,000 00
Drainage.. . . .	6,000 00
Maple industry—maintenance of schools and allowances to students.. . . .	4,000 00
Short courses and lectures.. . . .	9,113 76
Experimental union.. . . .	2,000 00

## ELEMENTARY AGRICULTURAL EDUCATION.

To promote the teaching of agriculture in academies, rural and normal schools, teacher training, school gardens.. . . .	8,000 00
To promote the teaching of domestic science in academies and normal schools—grants, lectures and inspection.. . . .	10,000 00
School children's exhibits.. . . .	2,000 00
Total.. . . .	<u>\$271,113 76</u>

## MANITOBA.

Demonstration farm, Killarney.. . . .	\$ 4,000 00
Dairy work.. . . .	6,000 00
Poultry.. . . .	5,000 00
Agricultural representatives.. . . .	8,113 11
Boys' and girls' clubs.. . . .	19,000 00
Short courses in agriculture.. . . .	16,000 00
Home economics, including short courses in household science.. . . .	15,000 00
Soil analysis and survey.. . . .	1,000 00
Bee-keeping.. . . .	2,000 00
Miscellaneous.. . . .	1,000 00
Total.. . . .	<u>\$77,113 11</u>

## SASKATCHEWAN.

## COLLEGE OF AGRICULTURE.

Staff salaries—research and extension service.. . . .	\$21,476 16
Women's work—homemakers' clubs.. . . .	5,500 00

## INSTRUCTION AND DEMONSTRATION.

Co-operation and marketing.. . . .	6,000 00
Animal husbandry.. . . .	6,000 00
Dairying.. . . .	6,000 00
Field husbandry.. . . .	6,000 00
Demonstration trains.. . . .	1,000 00
Agricultural representatives.. . . .	1,476 16
Veterinary short course.. . . .	500 00

## ELEMENTARY AGRICULTURAL EDUCATION.

Agricultural instruction in public, high and normal schools; household science; training of teachers; nature study.. . . .	25,000 00
School fairs.. . . .	1,976 16

## POST GRADUATE COURSE IN AGRICULTURE.

Agricultural scholarships.. . . .	800 00
Total.. . . .	<u>\$81,728 48</u>



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ALBERTA.

SCHOOLS OF AGRICULTURE.

(a) Maintenance.. . . .	\$35,000	
(b) Equipment, including libraries.. . . .	3,500	
		\$38,500 00
Demonstration farms—maintenance.. . . .		8,000 00
Publicity.. . . .		2,500 00
Women's work.. . . .		7,500 00
Agricultural representatives.. . . .		10,000 00
Miscellaneous.. . . .		465 62
Total.. . . .		\$66,965 62

BRITISH COLUMBIA.

Agricultural and horticultural instructors and agricultural representatives.. . . .	\$10,000 00
Field crop and dry farming demonstration stations.. . . .	3,100 00
Seed work.. . . .	1,000 00
Field crop competitions.. . . .	2,000 00
Silo demonstrations.. . . .	3,000 00
Drainage demonstrations.. . . .	500 00
Horticultural demonstrations and competitions.. . . .	3,000 00
Fruit packing and pruning schools.. . . .	2,000 00
Poultry.. . . .	1,000 00
Dairying.. . . .	3,000 00
Bee-keeping.. . . .	2,500 00
Boys' and girls' clubs.. . . .	1,500 00
Agricultural Journal and publications branch.. . . .	5,000 00
Pathological and entomological investigation and research. . .	3,000 00
Miscellaneous.. . . .	599 06
Agricultural instruction in public, high and normal schools, training of teachers, grants.. . . .	20,000 00
University of British Columbia—Investigation and extension..	8,000 00
Total.. . . .	\$69,199 06

NOVA SCOTIA.

COLLEGE OF AGRICULTURE.

Science building—interest and sinking fund.. . . .	\$ 8,000 00
Salaries and maintenance.. . . .	23,000 00

DEMONSTRATION AND INSTRUCTION.

Agricultural representatives.. . . .	12,500 00
Short courses, including maintenance of demonstration buildings and allowance to students.. . . .	1,000 00
Dairying.. . . .	4,500 00
Poultry.. . . .	1,500 00
Bee-keeping—educational work.. . . .	300 00
Drainage demonstration and soil surveys.. . . .	1,800 00
Soil and fertilizer demonstrations.. . . .	1,700 00
Field-crop demonstrations.. . . .	1,500 00
Fruit-growing.. . . .	2,000 00
Women's work—institutes and clubs, domestic science short courses, and allowances.. . . .	2,000 00
Entomological work—investigation and education <i>re</i> insect pests.. . . .	9,000 00

ELEMENTARY AGRICULTURAL EDUCATION.

Agricultural instruction in public, high and normal schools, teacher training, grants and allowances.. . . .	10,000 00
School children's exhibits and competitions.. . . .	2,000 00
Contingencies and miscellaneous.. . . .	916 69
Total.. . . .	\$81,716 69



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## NEW BRUNSWICK.

## AGRICULTURAL SCHOOLS.

Equipment.. . . . .	\$ 500 00
Salaries and maintenance.. . . . .	2,400 00

## INSTRUCTION AND DEMONSTRATION.

Agricultural representatives.. . . . .	8,860 00
Bee-keeping.. . . . .	2,700 00
Soils and drainage.. . . . .	3,700 00
Horticulture.. . . . .	6,000 00
Live stock.. . . . .	6,300 00
Dairying.. . . . .	4,600 00
Poultry.. . . . .	4,300 00
Fertilizers.. . . . .	500 00
Entomology.. . . . .	1,300 00
Agricultural societies.. . . . .	1,600 00
Women's institutes.. . . . .	6,000 00
Miscellaneous.. . . . .	550 80

## ELEMENTARY AGRICULTURAL EDUCATION.

Agricultural instruction in public, high, and normal schools, household science, teacher training, grants and allowances.	13,000 00
School fairs.. . . . .	1,800 00
Total.. . . . .	<u>\$64,110 80</u>

## PRINCE EDWARD ISLAND.

Equipment and maintenance, agricultural halls.. . . . .	\$ 2,825 00
Director and agricultural representatives.. . . . .	5,500 00
Short courses.. . . . .	300 00
Drainage and soils.. . . . .	1,000 00
Live stock and dairying.. . . . .	2,900 00
Poultry, beekeeping, horticulture and co-operative marketing..	300 00
Women's institutes.. . . . .	3,510 00
Agricultural instruction in public and high schools, training of teachers, allowances, grants, maintenance of rural science department, Prince of Wales College.. . . . .	11,500 00
Contingencies, including clerical assistance.. . . . .	3,914 22
Total.. . . . .	<u>\$31,749 22</u>

## THE EMPLOYMENT OF THE GRANT FOR THE PAYMENT OF PRIZES.

The question of permitting the use of Agricultural Instruction funds for the payment of prizes for boys' and girls' clubs and school fairs came up for consideration during the year. The regulation as to prizes, framed at the time the Agricultural Instruction Act came into effect, precludes the payment of prizes and premiums in excess of 10 per cent of the amount allotted to any specific activity. It further provides that the money expended on prizes, besides being limited to 10 per cent, shall be used in such a manner as to promote further instruction along the line of the demonstration. The regulation applies to boys' and girls' work in common with all other competitions. In the case of school fairs, in particular, where the individual prizes are very small the regulation is not easy to apply, and the question arises as to whether some relaxation should not be permitted.

Careful consideration of the matter leads to the conclusion that a rigid application of the regulation insofar as it relates to boys' and girls' clubs and school fair work is not at present advisable. At the same time a too free use of government funds from whatever source derived for prizes of this class, is not desirable. Every effort should be made to secure local contributions. Other resources should not be drawn



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upon unless these prove to be insufficient. The principle laid down in the regulation that prize money should be applied in such a way as to provide additional instruction is a sound one, and it is desirable that an effort should be made to apply it.

## AGRICULTURAL EDUCATION.

## EMPLOYMENT OF THE AGRICULTURAL INSTRUCTION GRANT TO ASSIST SCHOOL AGRICULTURE.

The manner in which the grant is applied for the promotion of elementary agricultural education by the departments of education of the respective provinces will be found specifically set forth in the *Agricultural Gazette* for 1919. The procedure followed by the province of Saskatchewan is somewhat different from that of other provinces and is worthy of special note. Not long after the moneys provided by the Act became available for the purpose of assisting agricultural teaching in the schools, Saskatchewan appointed an advisory committee, composed of the leading agricultural and educational officials, to advise the Minister of Education as to the steps to be taken for the encouragement of this phase of education. The decision to appoint a joint advisory committee to deal not only with actual school work but also with what is known as the junior extension movement, was the outcome of the recognition of the desirability of complete accord between the two departments, with resulting co-ordination of work, and the avoidance of pitfalls in the way of the practical application of instructional methods. It was realized that in a number of the states of the Union, as well as in some of the provinces of Canada, a great deal of experimental work had been carried on in elementary agriculture, and that many schemes of agricultural education had been abandoned after considerable outlay had been made upon them. The combined supervision of the officers of both departments would, it was believed, tend to the development of a sound and successful policy.

The personnel of the committee formed to deal with the matter was such that all the forms of work relating to agricultural education in elementary and secondary schools, junior extension, school fairs and similar activities could be made known to the committee as a whole and discussed. By this means the knowledge and experience of the Department of Agriculture and the College of Agriculture were made available to the Department of Education. Consequently, the policies recommended were seldom of an experimental nature, but had in them from the beginning the prospect of a reasonable outcome.

As a result, a large measure of success has attended the movement in connection with elementary agricultural education in Saskatchewan. The deliberations of the Agricultural Instruction Committee have led to a proper definition of junior extension work, whether carried on by the College of Agriculture, the Department of Agriculture or the Department of Education. Overlapping has been avoided, and efficiency and economy have been attained.

In view of the facts, the desirability is suggested of a closer co-operation between departments of education and agriculture in provinces where such co-operation does not already exist. Observation leads to the inference that at the present time a certain amount of overlapping effort is discernible in some instances between the respective departments which perhaps might be avoided in this way. There are also indications at times of what is perhaps a very natural difference in the point of view of departments of education and agriculture in regard to the values to be attributed to different forms of instruction. It seems probable that the vocational aspects of the work are prominent in the minds of agricultural officials, whereas cultural values are emphasized by educationalists. It should be recognized, however, that the chief value of school agriculture and related projects lies in the opportunity presented for training the intelligence through facts vital to country rather than to city life, and that, there-



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fore, all junior extension movements should be regarded as instruments in the accomplishment of this object. In addition to this, it is evident that the subject of school agriculture is of such a nature that its practical application is often an essential requirement to successful teaching, for the reason that theoretical instruction fails to arouse vivid interest in the mind of the pupil. Because of this fact a demand has arisen, based on teaching experience, for a form of instruction which shall vitalize the work, such as the school garden. Still wider opportunities for combining theory and practice are presented by the school fair, the poultry or potato project and boys' and girls' club contests. In several of the provinces much excellent work is being done by agricultural officials through such organizations as boys' and girls' clubs. These activities do much to awaken in the minds of the young people who engage in them an appreciation of the possibilities of agriculture, and to stimulate a greater enthusiasm for agriculture as a vocation.

At times, in fact very frequently, a lack of enthusiasm for agricultural teaching is observable. This is evident, not only on the part of the teaching fraternity, but also on the part of those entrusted with the local direction and management of educational affairs. Too often indifference and sometimes antagonism on the part of the local authorities to agricultural teaching is manifest. Departments of Education generally are making provision for the more or less systematic training of teachers in agriculture, recognizing that an adequate force of properly equipped inspectors and teachers is one of the essentials to advancement in this regard. This is perhaps best provided for by making agriculture a continuation subject in high and normal school courses, and quite frequently the grant assists to this end.

The compulsory teaching of agriculture is not by any means general. When not compulsory, it is not incorporated in the system of instruction, but remains optional, and the pupil is given credit for it neither in regular work nor in examinations. But even where it is optional, the fact remains that the local authorities have it in their power to require the teaching of agriculture in schools under their control, and can command teachers reasonably qualified for the work. Unfortunately, in communities where trustees remain indifferent or antagonistic, it is not likely that a very rapid advance will be made.

In two provinces, namely in Alberta and in Ontario, three local agricultural schools have been established with the assistance of the grant. These schools are entirely under the jurisdiction of the respective departments of agriculture, and are not associated with the provincial school system in anyway. Their function is to supply facilities for obtaining locally a vocational education in agriculture, instead of depending entirely on a provincial college of agriculture. The limitation attending the courses of instruction offered by these schools is that they lead only to the farm. Consequently, the student must elect to follow farming as a vocation or otherwise the value of the course will, to a great extent, be lost. This may deter undecided ones from attending these schools, but it is anticipated that a limited number of schools of this kind will draw sufficient students to make them successful. Alberta has now had several years' experience in its localized farm school policy, and that the results have been generally satisfactory will readily be admitted. In Ontario the school at Kemptville is still in process of construction, building operations having been delayed by the war.

### TRAINING SCHOOL GIRLS FOR DOMESTIC PROFICIENCY.

The framers of the Agricultural Instruction Act had a further object than the development of proficiency in the calling of agriculture. Better crops, better live stock and greater prosperity for the rural community were but incidental to the achievements looked for from the work to be accomplished. The development of a rural



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citizenship was the ultimate aim. Its accomplishment depends not only on a better knowledge of farm methods insofar as the activities of men are concerned, but on a womanhood better equipped for the efficient management of the home. In apportioning the grants each year, both aspects of the needs of the rural population have been kept in mind.

Until federal assistance was offered for rural education, household science instruction was considered quite outside the range of the country school. In its introduction, in a tentative way, one of the western provinces may claim to have taken the lead, but other provinces are now working out plans for giving elementary instruction in the rural schools on this very important practical subject.

Commendable progress is being made by Ontario in developing household science instruction in the rural school. The difficulties that have hindered progress in this direction, such as limited accommodation and resources, have to a great extent been overcome. Substantial grants are now offered to assist school boards to purchase equipment. Equipments have been designed that take up but little space in the one-room school, and the Ontario Education Department has issued an excellent household science handbook.

The household science work of the Department of Education of Saskatchewan is in charge of a director and six assistants whose work is financed from the grant. Two of the assistants teach in the two normal schools. The remaining four carry on extension work in the rural and village schools. These household science teachers accompany the inspectors on visits to the schools where they discuss the work with teachers, trustees and parents. Their duties are summarized as follows:—

1. Establishing noon lunch.
2. Teaching type lessons in sewing and in sanitation, and helping teacher to arrange programme of work.
3. Attending public meetings of school board and rate-payers for the purpose of giving information regarding the installing of equipment and operating the noon lunch.
4. Visiting the homes, with a view to bringing the home and school in closer touch.
5. Attending school fairs and teachers' conventions.
6. Giving the necessary instruction in the normal classes held for third-class teachers.
7. Assisting in instruction at the summer session.
8. Assisting in such other related work for the department as is deemed advisable.
9. Conducting short courses in various parts of the province during the winter months.

Care is taken to impress upon teachers and parents that although the noon lunch is very important, it is but one phase of household science work in rural schools. The great need of the prairie school demands attention to this reform first.

Up to the present time the Department of Education has given no special grant towards the cost of installing household science equipment in the rural schools, preferring to expend its funds in propaganda work believing that parents are willing to promote the best interests of their children when they realize what those interests are.

In the province of Manitoba instruction in household science is provided by the girls' club work conducted by the extension division of the Department of Agriculture in co-operation with the educational authorities.

In Alberta the need for household science instruction for girls from the farm is being met through the special agricultural schools established by the Department of Agriculture with the assistance of the grant. With their further extension, it is anticipated that instruction of this character will be available over a wide area of the province.



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In Quebec, household and academic science is taught in many of the convent schools. Fifty-one of these institutions, under the management of nuns of various orders, receive from the Provincial Department of Agriculture, from funds provided under the Agricultural Instruction Act, a yearly grant, provided that such institutions give a domestic science course officially recognized as of good efficiency, and that they make a full report of their work three times a year to the department.

So far as the English-speaking community is concerned, the work is largely in the hands of the household science department of Macdonald College. The college demonstrators give instruction to the children in canning, bread-making and sewing, while teachers are instructed in the preparation of the hot lunch. The members of the Quebec homemakers' clubs have also given valuable assistance in improving the lunch hour and in introducing household science in the schools. During the year, members of the college staff held fifty demonstrations for school children, attended by over 2,000 pupils and parents. The audiences were made up chiefly of girls going to school, but in many cases older sisters and mothers attended. The policy adopted of gathering the pupils of several schools together at some convenient centre has given good results. Nova Scotia has adopted the system of employing travelling rural science teachers. Seven of these are employed, each one being held responsible for the agricultural and home-making subjects in about a dozen schools. As the work has only recently been inaugurated, the actual results are small as yet, but those controlling it look forward with confidence to its extension.

In Prince Edward Island, a well equipped domestic-science kitchen has been provided at Charlottetown, which is used for short courses for country girls during the winter months and part of the term for classes from the city schools.

### THE JUNIOR EXTENSION MOVEMENT.

In the general term junior extension work may be included all forms of boys' and girls' club work as well as acre-profit and similar competitions not organized as clubs.

In its most approved and valuable form the club idea should be developed either as an integral part of the school system or in very close alliance with it. As the logical outcome of nature study and elementary agriculture it may well find a place in the educational system as it affords a chance to teach agriculture through local application. For the best results, adequate supervision and follow-up work are absolutely necessary. Ontario affords an excellent example of the follow-up in the short course provided at the agricultural college for the competition winners from each county.

The real reason for the development of the club idea is to teach agriculture. This must be kept constantly in view. The prize-winning and other material aspects of these contests should not be emphasized unduly, although they assist without a doubt in attaining the end desired as the element of competition and of financial profit lend interest and zest to the undertaking.

Through the work of the clubs, elementary agriculture takes on a more real and a more vital aspect. More than that, it tends to bridge the gap between school and home life and is in fact the only form of effort that has hitherto succeeded in accomplishing this much desired result. The subjects taught in the school are seen to bear a direct relationship to the common things of life. The school is thus linked up with the life of the community in a vital way.

It is not surprising, therefore, that the movement is attracting very widespread interest, and that in some provinces a considerable portion of the federal grant is being expended for teaching of this practical type among the young people of the rural districts. Notably in the province of Manitoba and other prairie provinces, agricultural college authorities, school authorities, women's organizations, business men and public



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spirited citizens are beginning to recognize in the movement a new and promising idea, and are working together for its promotion. Thus we find bankers willing to do the financing of a club project, accepting a promise to pay on the part of the boy making the loan as sole security. The business training and the contact with business men brought about in this way cannot fail to lead to a fuller comprehension of business affairs, on the part of the young people engaging in these activities.

The value of the work of the club members will easily be realized. No boy or girl can carry on a club project lasting for several months and faithfully carry out all that pertains to it without having interest stimulated in a high degree. He or she cannot plough and prepare the soil, or care for the poultry or pigs, or make a garment, or bake a loaf of bread, go through the process of canning fruit and vegetables, or select seeds and fertilizers, combat insects and diseases, or clean up the back yard prior to gardening operations, without coming in contact with scientific facts, whether they recognize them as such or not, and having lasting impressions made upon them; without learning to take bravely discouragements due to climate or other causes; without recognizing the need of co-operative relationships; without learning to respect the rights of others; and without learning lessons in community work. They will be spurred on by the competitive spirit, will be more keen and observant, and will find expression of their thoughts in the final report which they must render.

Boys and girls learn to work, to observe, to discriminate, to co-operate, to describe what they do; they learn business methods, they learn to weigh and balance things according to real values; they are encouraged to read and discuss, they are broadened by their contact with others, they develop initiative and judgment, they come to the age of eighteen or nineteen able to do something with a knowledge of how and the confidence that they can do it. Club work gets hold of boys and girls at the right stage of their development for directing or redirecting their thought.

ONTARIO.

During the year 1918, 307 fairs were held in the Province of Ontario, and 2,868 schools were included in the movement, with a total of 71,086 children taking part. This is an average of 9 schools for each fair and 25 pupils for each school. It is estimated 84,338 children and 88,908 adults attended the fairs, making a total of 173,246. The pupils had 66,613 home plots and made entries to the number of 115,531.

The provincial Department of Agriculture has been careful to purchase for distribution to the school children none but the best quality of seed oats, barley, wheat, and potatoes that could be obtained. Many farmers thus get a start with seed of the highest quality and of the best varieties. Agricultural representatives have been shown whole fields of grain and potatoes which had as their origin the small package of seed distributed to the pupils of the schools during the past few years. The value, therefore, of the school-fair work in the distribution of pure seed through the country must be recognized.

The number of eggs distributed of a bred-to-lay strain of utility breeds of poultry numbered 10,000, the greater quantity coming from the poultry breeding stations established by agricultural representatives in the different counties of the province.

The school fairs are managed by a rural school fair association composed of representatives from each school with the agricultural representative as manager.

*District Fairs.*

During the past season there were four district school fairs held in the province, where the winners at the smaller fairs were brought together. These were held in the counties of Oxford and Wentworth and the districts of Algoma and Manitoulin Island.



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Generally speaking prizes were offered by the agricultural society where the fair was held in the central part of the county or district. The 1st, 2nd and 3rd prize exhibits from the different school fairs in the county competed at the district fair.

### *Junior Farmers' Competitions.*

During the past few years the agricultural representatives of the Ontario Department of Agriculture have conducted profit competitions in feeding hogs, field crops, producing milk and feeding calves. These competitions were open to young men, farmer's sons, under thirty years of age, the prize being a free two-weeks' course in stock and seed judging, poultry raising, horticulture, farm dairying, bee-keeping or farm power conducted at the Ontario Agricultural College. All the competitions started off in the spring of the year, under fairly favourable circumstances, but owing to war and labour conditions a number of the contestants were forced to drop out before the competitions were concluded.

### QUEBEC.

The school and home gardens, boys' and girls' clubs and school fairs are under the direction of a special officer of the Department of Agriculture, assisted by the agricultural representatives and other members of the departmental staff. The department supplies pupils with seeds, plants and eggs. Some seventy-nine school exhibitions were held during the year.

Junior Extension work among the English-speaking population is carried on by the Rural School and Household Science sections of Macdonald College. In 1918 the number of fairs increased from twenty-one to thirty (including seven for French schools). Seeds or eggs were distributed to 7,800 children, compared with 4,900 in the year previous. Lecturing and judging also form part of the work. It is the intention that in future Macdonald College shall deal exclusively with the English fairs while the Department of Agriculture, through its demonstrators, will assume direct control of fairs in the French communities.

The Household Science Department of Macdonald College deserves credit for the uniformity introduced in connection with the cooking, canning and sewing competitions. This has been accomplished by the adoption of uniform age limits and having each pupil make the same kind of exhibit in each particular limit, together with a wide distribution of patterns, directions and bulletins. During the year, 105 demonstrations were given in the schools by members of the staff.

### MANITOBA.

The year 1918 was regarded as the banner year in Manitoba for the boys' and girls' clubs. In the spring the goal was set at 20,000 members, but the interest in the movement by the club leaders and the juveniles themselves was so great that over 25,000 were enrolled. Twelve contests were included in order that every member might find something in which he was interested. The contests were: Pig, calf and poultry rearing, grain growing, gardening, garment making, cooking, canning, wood-working, weed eradication, dairying, and essay writing. On account of the need for food supplies, the food production contests were emphasized, and the results were of a most gratifying nature. Pigs from six to eight weeks old to the number of four hundred and eighty were secured and distributed among club members at cost. The Winnipeg Rotary Club loaned \$350 to club members living at places where there were no banks, and the entire amount with interest was returned to the Rotary Club by the club members on the day it was due. Owing to the scarcity of help, it was not possible for nearly all the pigs to be shown. However, reports received from club members show that over 3,000 pigs were reared, or very close to half a million pounds valued at \$80,000.



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In the spring, 40,000 eggs were supplied to club members, mostly in the newer districts. The eggs were purchased from farmers living in the province who kept good flocks. A charge of forty cents a dozen was made to help pay the express, etc. The balance of the purchase price, sixty cents a dozen, was taken care of by the department. As good flocks of chickens can now be found in every part of Manitoba, it will not be necessary to supply eggs at reduced rates in succeeding years.

In registered seed growing there were 606 members enrolled. The exhibits of sewing and cookery showed great improvement while the number of exhibits of canned vegetables increased over 1,000 per cent, thus showing that the boys and girls were alive to the needs of the nation in food conservation.

The plan of organization was very similar to that of previous years. The inspector division was taken as the unit and the inspector as the natural club leader in his division. Plans for the year's work were fully discussed at a meeting of the inspectors and representatives from the extension service, and a programme for the year outlined. This arrangement resulted in close co-operation between the Department of Agriculture and Education, and explains more fully than anything else the increase in membership. The natural marketing centre of a district was taken as the logical headquarters for a club, and the town and the surrounding rural schools joined together in making the club work a success.

Most of the successful clubs were fortunate in having as the club manager some public spirited citizen, as a banker, a clergyman, storekeeper, farmer or school trustee. Teachers also make good club leaders, but on account of many teachers changing during the summer vacation, it has been found very desirable that a permanent resident have charge of the club, and it is very rarely indeed that he does not receive the whole-hearted support of the teacher.

For the most part, club members furnished their own seeds and other supplies. In getting money for the club fair prize list, the school boards have been liberal, and usually have set apart a grant of \$5 or \$10 for each rural school or for each room in the graded school. In addition to this, the Department of Agriculture provided from provincial funds one-third of the money paid in cash prizes in the agricultural and home economics sections.

The outlook for efficient agricultural teaching in the public schools of Manitoba is very bright. Officially, perhaps it might be said that agriculture is not taught in the schools, but, practically, it must be said that a great deal of it is taught, and taught in the very natural way. A close observation of the situation in Manitoba indicates that teachers devote more time to the teaching of agriculture than is usually the case, and, further, that they have secured the co-operation of the parents. In other words, the organizing ability of the teacher is combined with the sound practical knowledge and experience of the parents in directing the pupils along the most natural lines in the study of practical agriculture. The boy or girl who has been enabled to put \$50 or \$60 in the bank in his or her own name, as the result of work and study in conducting one of these agricultural projects, need not be asked if he or she enjoys studying agriculture because fully half the competitors in pig rearing in the province were girls, who were thereby developed in resourcefulness, self-reliance and confidence.

The number of exhibits at the fairs was as follows: Pigs, 1,123 pairs; calves, 895; chickens, 3,950; grain, 644; vegetables, 11,849; cookery, 5,263; sewing, 7,309; canning, 3,131; weeds, 962; dairying, 799; woodwork, 1,120; schoolwork, 18,377; other work, 990. A much larger number took part in the competitions, but for various reasons many exhibits did not reach the fairs.

*Agricultural Woodworking Courses.*

During July and August there was a very insistent demand for ten-day short courses in woodworking by the senior members of the boys' and girls' clubs. During



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these months it is possible to secure the services of expert teachers from the Brandon and Winnipeg schools, and those who were in attendance seemed to enjoy the work even more than play, and a great deal of exceptionally good work was turned out. Local school boards provided the material needed. The average attendance was 22, and the aggregate attendance 4,230.

## SASKATCHEWAN.

An interesting development in the province of Saskatchewan has been the organization of rural education associations. These associations, now numbering 80, were organized to arouse public interest in education in its relation to rural life, and in agricultural education in particular; to promote the use of the school garden; to encourage home-garden projects; to promote school exhibitions; to foster boys' and girls' clubs and similar activities. The association movement has developed so rapidly as to require a director, and in 1918, Mr. F. W. Bates, who had acted as director of school agriculture in the northern half of the province, was appointed to take charge of association work. About 2,000 schools participated in school exhibitions in 1918. Well-balanced programmes were arranged in most places. The exhibits were largely school-garden products and class-room work. In many cases stock entered in the Canadian Bankers' Association competition, or other local stock or poultry competitions and club work were most interesting features.

## ALBERTA.

The school fair work made some progress in Alberta last year, although it did not reach great magnitude. The agricultural representatives of the department who have the school fair work in hand, were pressed into service in behalf of greater production, and the school fair work was not very greatly forwarded. The movement is growing rapidly, however, on its own merits. The growth is shown by the following table:—

	Number of Fairs.	Schools.
1916... ..	6	85
1917... ..	9	157
1918... ..	15	241

More livestock features are being included than formerly. Besides the calves, colts and chickens previously included in the prize list, the work of pig clubs is made to culminate in the school fair, though the pig clubs are rather differently organized and financed.

Details as to the volume of work and extent of interest connected with the fairs may be gathered from the following figures: There were 1,591 exhibitors, 7,737 exhibits, and 11,000 people in attendance at the fairs.

## NOVA SCOTIA.

In 1918, there were 57 school fairs held, at which 231 schools exhibited. Individual fairs were held by 28 schools, and the remaining 208 schools at 29 different centres, covering 4 to 30 schools. This compares favourably with 130 schools exhibiting in 1917. Demonstrations in milk testing were carried out by the teachers at a number of fairs, to prepare for which fifteen teachers took a special course in milk testing at the summer school at Truro.

Poultry-project work in Nova Scotia schools is under the direction of the poultry superintendent who is an officer of the Department of Agriculture. Boys' and girls' clubs have not been organized.



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NEW BRUNSWICK.

There were 21 school fairs held in 1918 in which 50 schools participated. In 1917, 14 fairs were held. In New Brunswick it is not unusual to hold single school fairs, but union among districts for school-fair work has been effected to a greater extent than ever before.

In addition to the poultry clubs for boys and girls organized by the poultry superintendent of the Department of Agriculture, there were 73 poultry clubs organized as home projects in the schools of the province under the control and instruction of the teachers. Instruction was given to all the pupils in the schools where clubs were organized whether they were enrolled in the clubs or not.

PRINCE EDWARD ISLAND.

During the year 1918, school fairs registered a marked advance so far as numbers and educational value were concerned. Much enthusiasm was apparent among parents, teachers and pupils as regards the benefits derived from them. For this class of work the schools are grouped in what are called "school fair centres." There were 29 school fairs held in 1918, in which between 160 and 170, or over a third of the schools, were represented.

All the club work done in the province is carried on in connection with the schools. The clubs are organized in connection with the school fair centres. The educational aspects of the work are emphasized, members being required to keep records of their work, write compositions upon it and to exhibit at the school fairs.

AGRICULTURAL COLLEGES AND SCHOOLS.

ONTARIO.

The sum of \$125,000 has been set aside to complete the programme of building contemplated at the Ontario Agricultural College with Agricultural Instruction funds. This programme was held in abeyance during the war, and the payment of the money deferred until actually required.

The contribution to staff salaries amounted to \$15,000, and provided for the following: A director of farm surveys; lectures in poultry husbandry, horticulture, and geology and chemistry; an assistant in plant-breeding, three demonstrators in chemistry; demonstrators in botany, entomology, horticulture, and drainage; a lecturer and assistant in physics and three demonstrators in drainage.

*The Kemptville Agricultural School and Farm.*

The Ontario Department of Agriculture some two and a half years ago acquired land at Kemptville, in Eastern Ontario, for the establishment of a school of agriculture with demonstration farm in connection therewith. This school is being established and will be carried on by the provincial Department of Agriculture with funds provided from the Federal grant for Agricultural Instruction. The first of the school buildings, the live stock judging pavilion, was completed by the end of 1918, and provided accommodation for the six weeks of short courses in general agriculture, farm mechanics and household science, held in the early part of 1919. Now that the war is over, other buildings in connection with the school will be at once proceeded with and the school equipped for regular instruction in agriculture and household science.

The farm comprises two hundred acres of land adjoining the town of Kemptville, thirty miles from Ottawa. It is not proposed to make this an experimental farm in the sense that small plots will be used. The farm will be operated rather to demonstrate the benefits of thorough cultivation, the rotation of crops and of pure seed of suitable varieties. Twelve acres of orchard have been planted to the hardier varieties of apples.



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Already an excellent live stock foundation has been secured, some first-class animals having been purchased. These will serve as material for class-room work, and besides helping to make the farm profitable to operate, will demonstrate the advantage of superior live stock to the neighbourhood. As the surrounding country is devoted to dairying, no beef breed will be kept. The horse stock is of good draft type and of Clydesdale breeding. The hog stock consists of Yorkshires of approved type. It is proposed to establish a poultry plant and to stock it with bred-to-lay Plymouth Rocks and Leghorns. Commercially, the farm will be operated as a live stock, seed, dairy, poultry and truck farm. The completed farm buildings consist of a horse barn, a hog pen and an implement shed. The existing cattle barn has been remodelled and a silo provided. The work of construction and general farm improvement will be continued systematically but not hurriedly, and several years will be occupied in improving the farm and its equipment. Nor will the work be elaborate; in fact it is the policy of the department to demonstrate approved methods of farming in the best possible way rather than to build up a model without regard to cost of maintenance and operation.

## QUEBEC.

The Macdonald College is assisted by an annual grant of \$25,000 made from agricultural instruction moneys. With the funds thus provided the institution has been enabled to greatly enlarge the field of extension work and to conduct certain lines of research. These include the following: Veterinary instruction, research in biology and entomology; animal husbandry extension; organization and supervision of homemakers' clubs and demonstrations in connection therewith; poultry extension; school fairs and the improvement of school grounds; root-crop investigations and seed fairs.

The School of Agriculture at Ste. Anne de la Pocatière and the Agricultural Institute at Oka each receives a grant of \$25,000 to supplement the salaries paid to members of the staff and to provide equipment and building accommodation, thus strengthening these institutions for the benefit of the French-speaking community.

A special summer course in agriculture for boys from 12 to 19 years of age was offered at Ste. Anne de la Pocatière during July and August, 1918. The course was attended by fifty students.

## SASKATCHEWAN.

The allotment to the College of Agriculture for teaching, research and extension services amounts to about \$27,000 annually. The expenditure covers salaries and expenses of the following, either wholly or in part, viz.: Professor of agricultural engineering; professor of animal husbandry; professor of dairying; professor of chemistry; professor of poultry husbandry; instructor in field husbandry; a director of homemakers' clubs and an assistant; two field foremen.

The extension service included short-course work both at the college and at country points; the demonstration train; course for returned soldiers; dairy extension; the establishment of a system of butter grading; assistance in grading and marketing poultry products; judging at fairs; assistance to boys' and girls' clubs; supervision of homemakers' clubs and short course in household science.

## ALBERTA.

The sum of \$33,500 was provided to assist in financing the three agricultural schools in Alberta, contributing towards staff salaries, maintenance and supplies and equipment.

In addition to the regular work of the schools, special short courses are offered in gas engines, tractors, stock, grain, etc. The members of the staff also assist the



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department in the series of short courses and lectures held at country points, and in other extension work.

With the ending of the war, the province of Alberta has again taken up the matter of agricultural education and will provide three additional agricultural schools, all of which are being located in the south and centre of the province. This will make six schools offering a two-year course of practical agriculture both for young men and young women. Following these two years, if they wish, they may attend the agricultural courses at the university and graduate, having their standing from these schools. The schools are located on half-section farms, which are used as demonstration farms.

BRITISH COLUMBIA.

From the grant to British Columbia the sum of \$8,000 was, in 1918, allotted to the College of Agriculture of the University of British Columbia as a contribution towards the investigation and extension work of that institution.

NOVA SCOTIA.

As the Agricultural College at Truro is the centre of agricultural educational work for the province and, as well, of the activities of the Department of Agriculture—since the principal is also the secretary for agriculture—a fair portion of the grant under the Agricultural Instruction Act is applied to payment of the salaries of the members of the college staff and for building purposes. As a consequence of the aid thus given under the Act the efficiency of the college has been greatly increased. The provincial grant practically duplicates that given under the Agricultural Instruction Act.

INSTRUCTION AND DEMONSTRATION.

Of the general work in connection with field crops and live stock carried on by the provincial departments of agriculture and assisted directly or indirectly by the grant, it is difficult to give a brief and at the same time a comprehensive account. The undertakings form, as a rule, part of a general scheme for conveying information to the farmers involving the agricultural representatives, the short course, competitions in standing crops, stock-judging competitions, seed fairs, pig clubs, co-operative ownership of breeding stock, demonstration plots, seed distribution, clover huller demonstrations, and other lines of work. In most instances, to undertakings of this kind the grant gives merely a supplementary assistance, such as the payment of the salary and expenses of officers charged with special propaganda. It cannot be said, therefore, that there is a well defined scheme for promoting field husbandry or live stock husbandry independent of the general extension programme of provincial departments. A similar statement would hold good in regard to horticulture and dairying. The difficulty lies in indicating the precise amount of assistance rendered by the grant. An attempt to indicate the forms of work assisted may lead on the one hand to the misconception that the whole undertaking is financed by the grant. On the other hand, the ramifications are so extensive that the assistance indirectly given is apt to be overlooked. The agricultural representative system in the province of Ontario may be instanced as a case in point. There the federal grant meets the larger portion of the cost of this work. There can be no doubt that, with its many-sided application, it constitutes in that province the most potent agency for extension connected with the provincial department. The grant truly may be said to assist every one of the undertakings engaged in by these officers. But while it assists all, it does not completely finance any particular one. The same is true in a general sense of the well-organized extension



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service of the Manitoba Department of Agriculture, of the schools of agriculture of Alberta and their extension activities, the Saskatchewan College of Agriculture and its extension work, and so on through the list.

In considering the aid given to seed and crops and live stock, dairying, horticulture and similar activities, no attempt will be made to follow it through its various ramifications. It must be understood that short courses deal with farm animals and field crops; that junior competition in the rearing of hogs and steers promote live stock husbandry, and that seed distributed through the medium of school children is an incentive to the production of better field crops. Only forms of work that receive special assistance will be dealt with at any length, it being understood that supplementary assistance is often given in many ways other than those directly under review.

### THE AGRICULTURAL REPRESENTATIVE SYSTEM.

Much encouragement has been given under the Agricultural Instruction Act to the agricultural representative movement. In spite of the fact that certain provinces were greatly handicapped by the war in maintaining the personnel of their representative staffs, the scope of the movement shows, on the whole, a broadening tendency, which it is believed will become more marked from now on. In some of the lesser as well as in the larger provinces, much commendable work is being done by these men. In Nova Scotia, for example, the marked prominence given to demonstration features of the work, and the results attained, are worthy of praise and emulation.

It is evident that the principle of making the representative office the local motive centre around which shall revolve all branches of the department's field activities in crops, live-stock, horticulture, and even women's work, will prove in most instances to be a sound policy and give excellent results. The adoption of this principle and the more general extension of the movement will, it is believed, give a better return for the expenditure than a less concentrated policy is likely to yield. It would, therefore, appear desirable that, wherever possible, provinces should be encouraged to eliminate, in particular, some of the minor lines of work for which Agricultural Instruction funds are at present appropriated and employ these resources in establishing the representative system more generally. It is a question whether, in many instances, the grant is not being used at the present time for too great a variety of purposes. It is believed that by cutting out some of these minor lines and by concentrating on good representative work, not only would better results be secured but more complete accord would be established with the spirit of the Agricultural Instruction Act.

The organization of the agricultural representative system in Ontario and Quebec was described somewhat in detail in the report of 1917-18. No material changes have been made during the year and further reference to the subject in this year's report will be unnecessary, so far as these two provinces are concerned.

#### MANITOBA.

No part of the work of the extension service in Manitoba was interfered with to a greater extent by the war than the agricultural representative system. Owing to enlistment, at no time during the war were there more than three men in the field. There are now five men engaged in the work. In addition to this, the Rural Credits Society has three men in the field whose first business is to look after the Rural Credits Societies in their district, but who spend about half of their time on agricultural representative work. At places where there are no representatives, regular members of the extension staff carry on special features of the representative's work.

The agricultural representative work in Manitoba is placed on the following basis. The Department of Agriculture pays the salary of the representative up to



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\$1,800, also all of his travelling and living expenses when not at headquarters. The local community pays his salary from \$1,800 to \$2,500 and provides for office expenses. At each place a board of agriculture has been organized. This board consists of from nine to twenty members, depending on the number of municipal councils, agricultural societies, grain growers and others, who co-operate as committees with the representatives.

NOVA SCOTIA.

A good start has been made in agricultural representative work in Nova Scotia, in so far as the portion of the province yet covered is concerned. The island of Cape Breton is fairly well served by a staff of three representatives—a chief and two assistants. Besides these there is one in each of the two counties, Antigonish and Guysboro.

The work in Cape Breton began six years ago, or just after the grant under the Act became available. The claim is made that it has been the means of revolutionizing farming in that portion of the province and that the results would of themselves justify this whole grant to the province. The plan that has been followed is, therefore, worthy of special notice.

When the work of the representatives began on the island the amount of roots grown was a negligible quantity and crop rotation was uncommon. The plan adopted was to establish demonstration plots on suitably located farms, operated by suitable persons. Half an acre to an acre of land—usually sod land—was chosen and well prepared for the growing of turnips. The department paid half the cost of the fertilizer and took direction of the work, showing how all phases of it should be carried on. When demonstrations in such work as the thinning of the crop were being given, neighbours were invited to be present to see and take part in the work, and they availed themselves of the opportunity quite extensively.

In 1918 there were 12 such plots—most of them half an acre each—and the yields of turnips ranged from 990 to 1,540 bushels per acre. In addition to the plots established at carefully selected points each year, there have always been other plots carried on along precisely the same lines, with the only exception that the department bore none of the cost of the fertilizer. The latter have been established as a result of applications from farmers where there were no demonstration plots near by.

Crop rotation was a feature of the demonstration plot work. Following the turnips in the rotation came a grain crop and seeding down to timothy and clover and then two years under grass. Thus a four-year rotation was the one practised. Only first quality seed grain and grass-seed were used. Again, the free use of the fanning mill in seed selection was demonstrated and urged upon the attention of the farmers; and, in exceptional cases that seemed to warrant it, mills were purchased by the department for use in the work.

At the many meetings held, the value of crop rotation, from the standpoint of soil fertility and the value of the roots and other crops grown for the feeding of stock, were urged upon the attention of the farmers.

Before this work was started in Cape Breton farming was at a very low ebb. The quantity of turnips grown was infinitesimal and crop rotation was not practised. There was little good stock food grown and the stock kept was small in number and of poor quality. There has been a great revival. To-day turnips are quite a general crop, crop rotation is developing quite rapidly and there is a very marked improvement in the care and feeding of stock and the number and quality of stock kept. There are now some good, thriving creameries in operation in Cape Breton, and wheat production has developed to the extent of warranting what has already occurred, the establishment of small roller flour mills.

About three years ago, after the demonstration plot work had been well established, potato spraying demonstrations were started and these are meeting with a like measure



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of success. At first the knap-sack sprayer was used, part of a field being sprayed and the balance left unsprayed, and then a barrel sprayer was purchased. At the beginning of the work the department paid half the cost of the chemicals. As an illustration of the success of this work it may be mentioned that one district purchased the large sprayer used in 1917. In 1918 four barrel sprayers were purchased by the department and used in different districts, and some, if not all, of these are likely to be purchased for use in the districts in which they were used last year.

Enough has been said to illustrate the character and extent of the work carried on, which cannot be too highly recommended for its practical utility.

All the agricultural representatives of the province assist in co-operative work, and particularly in organizing the farmers for the co-operative marketing of wool. In Antigonish county there is considerable co-operative purchasing done by the farmers. Considerable work has been done in Antigonish in the introduction of the use of lime and in getting the farmers into practising crop rotation and the growing of clover. The representative in Guysborough has also taken quite an active interest in the elementary agricultural educational work of the schools.

#### NEW BRUNSWICK.

In New Brunswick there are three groups of agricultural representatives, with a chief and an assistant in each. They cover three counties each, or nine of the fifteen counties of the province.

Considerable attention was given by the representatives to organization and co-operative work during the past year. For instance, valuable assistance was given in connection with the organization and establishment of a large central creamery at Moncton, which, by the way, has had a very successful year.

A large amount of work was done in the way of organizing the farmers for the co-operative marketing of wool and rendering assistance during the marketing period. In this work the representatives co-operated with the live stock branches, both Federal and provincial. Lectures and demonstrations were given in connection with the treatment of grain for smut. Considerable assistance was given in the securing and placing of live-stock, particularly sheep, for which the province is well adapted. In the potato sections of the province assistance was given in the way of spraying demonstrations, and the inspection of seed plots. During August and September considerable time was devoted to the inspection and judging of field crops. Not a little of the time of all of the representatives was devoted to furthering the increased production campaign. This may be said to have applied to the activities of several branches of the department.

#### PRINCE EDWARD ISLAND.

As there was but one agricultural representative in the field most of the year, and as he specialized in drainage work, the amount of regular representative work was limited.

This representative devoted much of his time, in the western part of the province, to survey work for open ditching and under-drainage and in directing the work done along this line. The ditching machine, purchased during the latter part of the season of 1917, was in operation throughout the season of 1918, if we except some unavoidable breaks in the work. The total amount of tile drain laid was 3,113 rods, or the equivalent of under-drainage for about 80 acres of land. Survey work was done for about 500 rods of open ditching, some of it for outlets for the tile drains. The results of drainage work done thus far have been very satisfactory, and there is every likelihood of the work being extended quite rapidly, as there is considerable land in the province that must be under-drained before it will produce satisfactory crops.



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Considerable work was done along such lines as judging in standing field crop competitions, preparing for and assisting in judging at the Maritime Seed Fair held at Summerside in December, and assisting in the co-operative marketing of wool. There were about 53,000 pounds of wool marketed co-operatively in 1918, as compared with about 24,000 pounds in 1917.

## THE AGRICULTURAL SHORT COURSES.

## ONTARIO.

The Ontario agricultural representatives' short courses or classes for young farmers, were fairly well attended in 1919 in spite of the prevailing influenza epidemic. These classes have been held annually for the past eight or ten years in some counties, each year at a different centre, so that they may be accessible to all. While designed to benefit any one engaged in farming, they make a special appeal to young farmers of from eighteen to twenty years of age, who have been out of school for some time, and who begin to feel the need for special instruction in matters connected with the business of farming. Many representatives reported successful classes with marked interest being shown in spite of a somewhat general decrease in the numbers attending.

The classes are usually of four weeks' duration, and are planned, in a general way, to meet—so far as the limitations of such classes will permit—the needs of young farmers for information on the theory of agriculture and its application to farm practice. They are designed, in the second place, to supply information on special practical subjects such as the gas engine and electricity as sources of power, milk-testing, co-operation and marketing, farm accounts, and farm management. In some counties, arithmetic and business correspondence, farm buildings, and sewage disposal were among the special features. The needs of a locality based on a careful study of local conditions, such as every representative must make in order to fit his activities to the sphere of his operations are also kept in view and emphasized. Thus we find horticultural problems stressed in the Niagara and Lake Erie districts, dairying in central and eastern Ontario and the feeding of beef cattle in the beef sections, while, as would naturally be anticipated, in a province such as Ontario, where general agriculture is chiefly followed, animal and field husbandry topics, such as stock judging, and seed selection, are dealt with almost everywhere. To meet this situation specialists in such subjects, the best that can be procured by the provincial Department of Agriculture, lend their assistance. These include not only men who are recognized as successful in their particular line of enterprise, but also representatives of the Dominion Department of Agriculture and of the Ontario Agricultural College staff.

With the rapid development in the use of power on the farm, has come a desire on the part of those operating engines to learn more about their construction so as to employ them to better advantage. This is true not only of the gas engine, which is now being used for practically every purpose to which power can be applied on the farm, but also to the utilization of electrical power and the operation of tractors. To meet this particular demand, special courses were arranged at several points in the province, as at Chatham, where a five-day course was held in January in the theory and practice of mechanical farm power, gasoline engines and tractors. In Ontario, Haldimand and some other counties these subjects were also featured. No farmer in these days can afford to be without a knowledge of the information supplied by courses of this nature.

A motion picture outfit was employed to advantage in many instances, illustrating various agricultural operations, films prepared for the provincial agricultural department being used.

Every effort is made in these courses to keep the practical aspects prominently in view, and to illustrate the teaching by demonstration. A common practice is to spend



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the forenoon in lectures and discussions, and to give over the afternoon to visiting near-by stock farms for the purpose of judging cattle, horses, sheep, and swine, and in some of the counties near Toronto the classes were taken to the union stock-yards, the parliament buildings and other places of interest in Toronto. From among those who show proficiency in stock-judging, a county team is selected to compete at the inter-county competition held at the winter fair in the fall. Young men taking the course are also eligible for the acre-profit, steer-feeding, dairy profit, hog-feeding, and other competitions held under the auspices of the Junior Farmers' Improvement Associations, the winners receiving free transportation and living expenses while attending the two weeks' course in stock and seed judging at the Ontario Agricultural College.

Another benefit derived from holding short courses is that the representative comes in touch not only with those attending the course, but with the parents and also with various associations, such as farmers' clubs, township councils and agricultural societies. In this way the course affords opportunities for the representative to build a foundation for future work in the community.

The social influence of the classes is also a factor of value. Thus, the opportunity is taken advantage of by those living in the same county or district to become better acquainted. Continuing this idea, it is the custom in many instances, to hold at the conclusion of a course a supper or social reunion to which the students bring their friends and relatives.

The work is assisted by the grant made to the province under the Agricultural Instruction Act, and its value in influencing agricultural standards in Ontario will readily be admitted. Perhaps an element of even greater worth will be found in the awakening of the minds of many to the value of education in increasing power and usefulness, with greater satisfaction in life as the outcome. An evidence of this awakening will be recognized in the fact that quite a large number of the short-course men are led to take the regular course at the Ontario Agricultural College.

## QUEBEC.

One series only of short courses and lectures on agriculture and household science was held during the year, instead of two as formerly. The record of attendance was as follows:—

	Visits.	Lectures.	Demonstrations.	Attendance.
General Agriculture. . . . .	312	386	68	25,912
Supplementary lectures . . . . .	62	90	24	7,205
Domestic Science . . . . .		132	33	19,280
	374	598	125	52,397

## MANITOBA.

During 1918 there was a strong demand for extension schools, particularly for those at which considerable attention was given to the operation and repair of the gas engine.

Three distinct types of schools were provided:—

1. The ten-day travelling agricultural engineering schools, which included courses in gas engines, field crops, live stock and farm accounts for the men, and home economics subjects for the women.

2. The five-day schools in live stock, poultry and home nursing.



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3. The two to five-day schools in live stock, dairying, poultry and bee-keeping.

Altogether twenty-one schools of ten days duration were held. The attendance at each course averaged 55 men and 30 women, with an aggregate attendance of 34,000.

The five-day courses, twelve in number, had an enrolment of 754 and an aggregate attendance of 9,175.

The two to five-day courses in live stock, poultry, and bee-keeping were held at places where these subjects were in special demand. Eight schools of this type were held with a total attendance of 2,362.

*Institute Lectures.*

In addition to the lectures given by the regular members of the extension staff, a considerable number of additional lectures are given by members of the Agricultural College staff, as well as by prominent farmers in the province. They have been generally given in co-operation with farm organizations and school boards.

During June and July a series of 110 meetings was held in connection with the women's institutes. The speakers chosen for these meetings were, for the most part, members of the most progressive women's institutes of the province.

The attendance at all of these meetings was very gratifying, and did a great deal to increase production and to conserve food.

For the work of the three types of schools during the months of January, February and March, 36 instructors were employed. Forty-one schools were held with an enrolment of 2,415 students besides many occasionals. Illustrated lectures were given to those who were not regularly enrolled. One of the most popular side-lines was a series of twenty lectures on concrete construction.

The number of short courses and the attendance in home economics was: Dress-making 78; millinery, 41; home nursing, 50; cooking, 106; canning, 111. Aggregate attendance 35,110.

## CO-OPERATION AND MARKETING.

## ONTARIO.

An increasing tendency is noted in Ontario towards the co-operative selling of farm products, particularly in connection with live stock. Four years ago there were practically no organizations shipping live stock. At the present time there are some 200 organizations participating in this enterprise, and during the year live stock was shipped co-operatively to the Toronto market to the value of a million dollars. All indications point to greatly increased activity in this form of co-operative marketing.

The efforts of the director of co-operation and markets to induce farmers' co-operative organizations to become incorporated is meeting with a larger measure of success as it becomes more clearly recognized that incorporation is necessary as a proper safeguard to business.

Farmers' clubs show a rapid increase, there being approximately some 600 clubs in active operation, the greater number doing a buying and selling business.

In addition to the farmers' clubs there are 30 general co-operative organizations of farmers, 91 breeders' clubs, 58 fruit associations, 50 egg circles, and also a number of organizations of growers of special crops. There are 1,000 cheese factories and 600 creameries in the province, many of which are owned by the patrons.

## SASKATCHEWAN.

Throughout the period covered by this report the co-operative organization branch continued its activities in gathering and disseminating information relative to lines of co-operative endeavour applicable to Saskatchewan conditions. During the year 45 co-operative associations were registered, bringing the total of such asso-



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ciations in the province up to 436. Special attention was given to the organization of co-operative live-stock marketing associations. These associations marketed 600 cars of live stock on which an average saving of one cent per pound was realized.

An endeavour was made to interest farming communities in co-operative production and a potato growing association was organized at Earl Grey, where some 40 farmers united to produce certified seed potatoes. Seed was secured through the co-operative organization branch and arrangements were made to have the growing crop inspected by a representative from the office of the Dominion Botanist.

Through the efforts of the branch a series of eight co-operative horse sales was organized under the auspices of local agricultural societies in the older settled portions of the province, the object being to find a satisfactory home market for the surplus of farm horses now existing. It is expected that these sales will develop into annual events, and plans are already under way for the holding of a much larger number in the spring of 1920.

The co-operative wool-marketing work which has been carried on each season since 1914 showed a most gratifying increase. A total of 916 consignments, aggregating 394,000 pounds of wool were handled.

The co-operative poultry marketing work which has been carried on under the direction of the branch since 1915 was taken over in the fall of 1918 by the Saskatchewan Co-operative Creameries, Limited. This procedure was in line with the general policy of the department which is to inaugurate and carry on undertakings of this kind only to demonstrate the usefulness of the project and then to turn the work over to any co-operative organization of producers that is in a position to carry it on in a satisfactory manner.

Speakers were provided to discuss co-operative producing and marketing problems and a number of meetings in different parts of the province were held, also considerable quantities of bulletins and pamphlets were distributed through the mails.

## LIVE STOCK.

### ONTARIO.

Live-stock improvement work in Ontario, in so far as it is assisted by the grant, is instructional in character. It consists: (1) of practical judging courses for farmers, and (2) short courses at the Ontario Agricultural College for judges at fall fairs. The live-stock competitions conducted under the auspices of the junior farmers' organization and the team competitions in live stock judging conducted by the agricultural representatives, are a means of affording valuable instruction, which should result in improving the type of live stock of the province.

#### *Judging Competitions.*

In connection with the short courses held by the agricultural representatives, the judging of live-stock is a prominent feature. A better knowledge of this subject on the part of the young farmers throughout the province is being developed by this means. Inter-county live-stock judging competitions are organized in connection with the winter fairs at Guelph and Ottawa. The interest in these contests resulted in practically every county being represented by a team.

### QUEBEC.

Until last year the efforts of the Quebec Department of Agriculture in connection with the live-stock industry were directed chiefly towards hog and bacon production insofar as Instruction Act funds were concerned, mainly through the



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abattoir at St. Valier. In 1917 and 1918 the grant was also drawn upon to promote the advancement of sheep-breeding, horse-breeding, and the improvement of dairy cattle, by means of personal visits to clubs and individuals owning breeding animals.

In districts where there are permanent agricultural representatives located, the inspection is carried on by these officers. Elsewhere, the work is performed by special instructors. A comprehensive bulletin on sheep was prepared and issued together with other pamphlets on animal husbandry.

To promote sheep husbandry Macdonald College has established demonstration flocks of pure-bred sheep at various points in the province. Seventeen of these flocks have been placed with farmers to date. The majority of these are of the Cheviot breed, which appears to be well adapted to Quebec conditions. Pure bred rams have also been distributed in a few instances to demonstrate their value in the improvement of grade flocks.

SASKATCHEWAN.

Three travelling instructors and demonstrators, one being a fully qualified veterinarian, carried on work during the year under the direction of the Live Stock Commissioner. They visited many farmers throughout the province, particularly those purchasing or desiring to start new flocks and herds, and gave instruction and advice in regard to the breeding, care and feeding of farm animals. They also acted as live stock judges at fairs. A portion of the grant was expended to secure the services of experts to address the annual convention of the Saskatchewan Veterinary Association.

ALBERTA.

At the demonstration farms pure-bred herds are being established to serve as centres for distribution. Four Shorthorns and three Holsteins were purchased during the year and added to the herds.

NEW BRUNSWICK.

Perhaps the most extensive work done by the Live Stock Branch, during the year, was that in connection with its sheep campaign, which may be considered under two heads, namely: (1) An effort to secure an increase in the number and an improvement in the quality of sheep kept; (2) encouragement of and assistance in the co-operative marketing of wool.

Many meetings were held in connection with both phases of the work, full use was made of the agricultural societies and, in some cases, wool-growers' associations were formed.

There were five carloads of pure-bred sheep imported and the department assisted in the distribution of about 1,400 sheep in all.

The co-operative marketing of wool has developed to quite an extent. Well up to 32,000 pounds of wool were marketed in this way, in 1918, and brought the very satisfactory average price of 77.2 cent. This co-operative movement is growing quite rapidly.

PRINCE EDWARD ISLAND.

The chief activities along live stock lines, during the year, were the encouragement given to the increased production of pork, and a campaign for an improvement in the quality and an increase in the number of sheep kept. Distribution of about 125 breeding sows was made, and there were four carloads, or about 160 in number, of rams and ewes—mostly Shropshire and Oxford—imported for the farmers of the province.



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## DAIRYING.

## SASKATCHEWAN.

During the period covered by the report, the butter-grading work, which has been conducted by the dairy branch since 1914, has steadily grown in importance, and of late has been greatly extended, there being an increase of approximately 30 per cent in the total quantity of butter graded during the year, as compared with the twelve months previous. A complete report of the score, with suggestions for improvement, is sent to the buttermaker immediately the grading is done. A great improvement has resulted in both quality and uniformity of output.

Four instructors were at work during the summer season and three during the winter months. All cream in the province is now purchased on quality or grade basis, and an important feature of the work of the travelling instructors is to visit the creameries and cream buying stations to advise the different buyers regarding grade standards for cream and to assist in having uniform standards adopted at all points. A considerable amount of time is also spent by the instructors in making personal visits to the cream producers.

Very marked improvement in the quality of the cream delivered has resulted from this personal work amongst the creamery patrons. The instructor, by visiting the farmer, is able to investigate the methods practised in producing and handling the cream and give advice and suggestions for improvement. The value of this work is vastly increased because of the instructor being in a position to say that a higher price is invariably paid for the higher quality.

During the summer months speakers were supplied for a number of farmers' meetings called to discuss dairy questions and judges in dairy products were also supplied for a considerable number of fairs. At points a long distance from a creamery, or where, for any reason, such information was desired, the men doing the judging, and also the instructors in the course of their regular work, gave information regarding the manufacture of dairy butter.

During the winter months, in addition to giving assistance in the holding of short courses arranged by the extension department of the University, the dairy branch also arranged special dairy meetings at twenty-eight different points in the province. At these meetings addresses were given in practical dairying subjects and, wherever possible, demonstrations in the judging of dairy cattle. At all meetings lantern slides were used illustrating various features of the work dealt with by the speakers, and where it was not possible to have demonstrations on live animals, special attention was given to type, handling, quality, etc., in showing the slides of the different dairy breeds. The use of the lantern slides proved a feature of special interest at these special dairy meetings, at which a total attendance of 1280 was reported. In addition to the regular meetings, special talks on dairying were also given to school children, at a number of points, during the afternoons.

## BRITISH COLUMBIA.

Many valuable lessons have been learned from the work carried on by the various cow-testing associations in British Columbia. Active associations are well established at four or five points and some two thousand dairy cows are constantly under test. The system followed provides that the tester visit the farm of each member of the cow-testing association each month. The information afforded by the records obtained by this means gives the farmer a very close approximate of the performance and profit or loss of each individual cow in the herd.

The benefit of this method of keeping dairy records is very forcibly shown by two years' work in the Comox Association, where the following marked increase in the production of individual cows was shown:—



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The number of cows producing 400 pounds of fat and over in 1916 was 4; in 1917 it was 15.

The number of cows producing 300 pounds of fat and over in 1916 was 29; in 1917 it was 75.

One of the most gratifying results of the work is the very considerable increase of production of individual herds.

QUEBEC.

The dairy industry being a very important branch of agriculture in the Province of Quebec great efforts are being made to induce farmers to improve their herds through the use of good sires. To this end, officers of the provincial department visit agricultural associations and individual farmers and advise as to the selection of breeding stock and its care and maintenance.

At the St. Hyacinthe Dairy School, six winter courses were held for the instruction of cheese and butter makers. The fifty dairy instructors employed by the department on inspection work, are given a special four-day course each year at the institution.

NOVA SCOTIA.

The rather marked development in cooperative dairying in Nova Scotia dates from the time that the grant, under the Agricultural Instruction Act, became available. The work was then organized under a capable superintendent of dairying, and has developed very rapidly during the past five years. It is but a few years since the value of the combined output of the creameries and cheese factories of the province was considerably under \$100,000. In 1917 there were twenty-two creameries and three cheese factories in operation, the value of whose output exceeded \$700,000. The 1918 output was about the same as in 1917.

Considerable attention was given to the grading of cream and this had the effect of materially improving the quality of the cream supplied to the creameries and of the butter made from it. Butter from fifteen out of the twenty-two creameries of the province was stored during the summer to determine its keeping qualities, and was exhibited and scored at the annual convention of the Dairymen's Association for the two-fold purpose of education and the awarding of prizes.

It is during recent years, since the impetus given the dairy industry, that the Dairymen's Association has been formed. The association holds an annual convention at the Agricultural College, Truro.

The staff of the dairy branch of the department, which had become depleted through enlistment, was strengthened by the appointment of an assistant to the superintendent of dairying, who devoted his attention to creamery inspection.

The superintendent of dairying notes in his report that the greatest weakness of the dairy industry of the province is the small production per cow, and emphasizes the need of cow-testing, weeding, breeding and good feeding, if dairying is to be made the profitable calling that it should be.

NEW BRUNSWICK.

The main features in connection with the development and improvement of the dairy industry during the year were: (1) The establishment and operation of a central creamery at Moncton, and (2) fuller inspection and instruction in connection with the cheese factories, and the grading of cheese.

The Moncton creamery is well located, well equipped and quite well patronized. The output for the first year was approximately 150,000 pounds. A few similar creameries, well located, would do much to foster the growth of the dairy industry.



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which, on the whole, must develop along creamery lines. At present there are large sections of the older settled portions of the province where there is practically no co-operative dairying carried on, and where the number of dairy cows kept is small.

Through thorough inspection and instruction work, and the grading of the cheese for the market, a decided improvement has been worked in the quality of New Brunswick cheese during the past year.

#### PRINCE EDWARD ISLAND.

There were, in all, thirty-eight cheese factories and creameries in operation in Prince Edward Island—twenty-four cheese factories, ten creameries, and four combined cheese factories and creameries. As co-operative dairying is an established industry in the province, the work of the superintendent of dairying consisted very largely of instruction and inspection work amongst the factories and the visiting of patrons.

In addition, a thorough survey was made of conditions in the eastern part of the province with the object of ascertaining the cause of and the remedy for the decline in co-operative dairying in that section.

#### MARITIME DAIRY SCHOOL.

The Maritime Dairy School was held in Truro during March, the attendance being nine students in cheese-making, ten in milk-testing and twenty-two in creamery work. The teaching staff consists of the dairy officials of the three provinces together with members of the staff of the Nova Scotia Agricultural College. Railway fares are refunded to students, and the expense of the course are met from the grant.

### POULTRY HUSBANDRY.

#### ONTARIO.

The poultry stock of several of the provinces has undoubtedly been greatly improved by the distribution of eggs for hatching to rural school children in connection with the school-fair movement. In the province of Ontario during the past few years, eggs of a bred-to-lay strain of utility breeds of poultry such as Barred Plymouth Rock, Rhode Island Red and White Wyandotte, have by this means been distributed pretty generally over the province.

#### MANITOBA.

Manitoba reports that as a result of the distribution of eggs to boys' and girls' clubs, pure-bred poultry are now found on thousands of Manitoba farms where a few years ago nothing but scrub fowls were kept. It is felt that in future it will not be necessary to supply eggs free to club members as pure-bred stock can be found in every locality. Much of the poultry work in Manitoba consists of lectures to boys' and girls' clubs, dressed poultry fairs and poultry lectures at the short courses. Between fifty and sixty combined seed-grain and dressed-poultry shows were held.

#### QUEBEC.

Some twenty-seven thousand eggs were distributed by the poultry branch of the Quebec Department of Agriculture to the pupils of elementary schools and others. Practically the eggs only of American breeds were included in this distribution: Rhode Island Red, Plymouth Rock and Wyandotte. Most of the eggs were supplied by the poultry stations of the department, by the co-operative associations, and Mac-



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donald College. The distribution was made through the agricultural representatives and under their direct supervision, with the help of institutes and agricultural co-operative associations.

The poultry work carried on by the Quebec Department of Agriculture consists of (1) the operation of poultry rearing stations, sixteen in number, in various sections of the province; (2) the operation of co-operative incubators; (3) poultry housing demonstrations; (4) the distribution of eggs for hatching to rural school children, and (5) short courses and exhibitions.

The work is supervised by the chief of the poultry division of the department, having under him ten instructors who visit the stations and superintend operations, each having from two to four stations under his care.

Co-operative incubators are operated at seven points, each in charge of an instructor, to which the farmers in the district bring eggs for hatching.

During the year, the poultry branch contributed to the erection of twenty new houses, besides remodelling old ones. An instructor from the department directs the work, the Experimental Union supplies a carpenter and the proprietor the additional labour. The occasion is taken advantage of to instruct those in the vicinity in up-to-date methods, and the owner is required to report progress for at least one year.

Macdonald College also has established poultry stations in co-operation with farmers at various points. For this demonstration, poultry houses of a type suitable for the farm were erected, each accommodating from seventy-five to one hundred hens. Barred Plymouth Rock pullets were supplied as foundation stock, and male birds were distributed annually by the poultry department. Each farmer carrying on the work is required to keep account and to report monthly to the college. The houses have proved very successful, and egg production has increased each year. The number of chickens reared has also increased materially and the quality of the flocks has improved. These demonstrations have influenced the industry in the neighbourhood very considerably, and the flocks are drawn upon for foundation stock of the utility type in the respective communities. At the present time there are sixteen poultry houses in which flocks of fowls have been placed headed by male birds bred at the college. These flocks supply hatching eggs for distribution among the school children.

BRITISH COLUMBIA.

To encourage the poultry industry in the more remote sections of British Columbia, a number of breeding stations have been established. A suitable man is selected in each district, is provided with a flock of pure-bred birds and is required to sell fifteen settings of eggs at a fixed price, and to demonstrate the work. At the end of the year the flock becomes the property of the operator.

*Egg-laying Competition.*

The province participates annually in the International Egg-laying contest. The local contest, which extends over twelve months is conducted under the supervision of an officer of the Agricultural Department.

NOVA SCOTIA.

As an aid to the improvement of housing conditions for poultry, the local Department of Agriculture has, from year to year, helped to erect demonstration poultry houses on farms at suitable central points, through furnishing plans and lending financial aid to the extent of about \$100 for each such house erected. These have served as models and many good houses have been built as a result. For instance, as a consequence of the erection of one at Bridgetown, there have been fifteen similar houses built in that locality.



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There were three egg circles in operation in the province last year. The method of handling the eggs is to place them in a solution of water-glass, in a cement tank built in a clean, cool basement. The department defrays the cost of building the first tank, directs the work and markets the eggs.

The superintendent of the poultry work directs his efforts to assisting the farmers in the growing and securing of suitable foods, in the improvement of their stock, the building of suitable poultry houses and the care and marketing of eggs under the most favourable conditions.

#### NEW BRUNSWICK.

The two cardinal principles in the policy of the poultry branch, in its efforts to develop the poultry industry of the province, have been the introduction of pure-bred stock from a general utility breed and concentration upon a single breed for this purpose.

In order to stimulate interest and further the ends sought, considerable time and attention were given to the organization of boys' and girls' poultry clubs, for children ranging in age from twelve to eighteen years. There were eighteen such clubs organized during the winter of 1917-18 and twenty during the past winter. Last year over 12,000 eggs were distributed amongst club members, each receiving fifty eggs and being bound to exhibit all of his or her hatch at the joint fair of the pig and poultry clubs and to return four chickens to the department, in the fall, in payment for the eggs received.

Most of the birds received in the fall were put into crates at the Dominion Experimental Station, Fredericton, and fattened, after which they were properly killed, dressed and marketed.

### FRUIT AND VEGETABLES.

#### ONTARIO.

##### *Vegetable Demonstrations.*

The work of the vegetable specialist of the Ontario Department of Agriculture is provided for by the grant. During the year a complete survey was made of the province in connection with the industry. The survey led to the conclusion that generally speaking the men in the business were uninformed as to the experimental work being carried on by government institutions.

As in previous years considerable attention was given the branch to methods of dealing with insects and fungoid troubles. A garden tractor was demonstrated at several points. In the autumn, most of the specialists' time was devoted to instructing returned soldiers in vegetable growing at the Guelph Convalescent Hospital, in response to a strong demand for information of this character.

#### QUEBEC.

The work of the horticultural branch of the province of Quebec is financed mainly by the grant, and covers a wide range of activities. These include fruit growing, vegetable growing and canning, the production of nursery stock, the supervision of school gardens, and the preparation and distribution of bulletins.

The aim of the fruit-growing division is to encourage the growing of fruits through the medium of the horticultural societies and by means of demonstration orchards and stations. Six demonstration orchards are being conducted in the leading fruit growing sections. In addition, some fifty fruit stations are scattered throughout the province, constituting centres from which owners of orchards in the locality can readily secure information. A director of demonstration orchards and a superintendent of fruit



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stations make inspections and give the necessary guidance. The teaching is done through lectures and demonstrations given in the orchards. The department's instructors visit the members of horticultural societies, 5,000 in number and give demonstrations in planting, pruning and spraying. Facilities are extended to the membership in connection with the purchase of fruit trees, implements, spraying outfits and spraying materials. At Berthierville a fruit tree nursery of twenty-five acres has been established. Stock from the nursery is distributed as school garden premiums. Fruit trees, mostly apples, are distributed through the horticultural societies.

The vegetable section conducts an experimental plot at Villa Belvedere, to ascertain the best varieties of vegetables for the province. The staff is employed in visiting and giving information to vegetable growers during the summer and in lecturing in the winter. Judges at fairs are also supplied.

The horticultural branch furnishes free seed to children engaged in school gardening, besides assisting in the conducting of school fairs. This work is under the direction of a superintendent of school gardens.

Work in connection with the canning of fruits and vegetables is being carried on by a specialist with the object of inducing farmers and vegetable growers to can garden produce for their own use.

The horticultural department of Macdonald College operates three demonstration apple orchards, and holds orchard meetings from time to time in connection therewith.

BRITISH COLUMBIA.

At Summerland, in the Okanagan Valley, the plantation of Mr. J. H. Hilborn, is being conducted as a demonstration in fruit and vegetable growing. Mr. Hilborn owns the farm and the crops but receives a small subsidy from the Federal grant for revealing his methods to the public, and stating exactly what his receipts and expenditures are. The enterprise constitutes a demonstration by a farmer rather than a government demonstration station, and is, therefore, free from the criticism that the results are secured by the lavish expenditure of government money. The Hilborn farm comprises about ten acres. In 1917, the gross returns were \$7,195.10; the expenses were \$2,237.85; and the net revenue \$4,957.25. Fifteen different crops including fruit and vegetables, were grown, and the above figures were given in the sworn statement of receipts and expenses furnished the Department of Agriculture. Not all the crops grown have been profitable each year, but the aim has been to show that, with diversity and modern methods, the annual revenue from the plantation would be satisfactory. Other growers are at liberty to inquire into and follow the methods and practices adopted.

NOVA SCOTIA.

In Nova Scotia the horticultural division of the Agricultural College operates two types of demonstration orchards with the assistance afforded by the grant. The model orchards, thirty-five in number, ranging from one to two acres in extent, are located outside the proven fruit districts but where conditions are regarded as promising. Their object is to determine the most suitable varieties of apples for the respective districts, and to demonstrate proper methods of care and management. The department supplies the trees, spraying outfit, a limited amount of fertilizer, and where necessary a limited quantity of tile for under-drainage. Generally speaking, the undertaking has proved reasonably successful.

The second type is the demonstration orchard. These consist of bearing orchards which were taken over by the horticultural division for a period of five years to demonstrate the advantages of approved cultural methods. This work was begun in 1914, and there are now eight of these orchards.



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*Demonstrations with Vegetables.*

In ten of the Nova Scotia supervised orchards vegetable gardens were operated in 1918 as demonstration in vegetable growing. The department supplied the seed and fertilizer necessary for a quarter of an acre, and directed the work. Demonstrations in potato spraying were also given during the year.

## NEW BRUNSWICK.

Considerable attention is given to orchard demonstration work in New Brunswick by the horticultural division. The demonstration takes three forms: (1) Illustration orchards, eleven in number, which were originally planted and have since been cared for by the department; (2) demonstration orchards, these being renovated and cared for under the direction of the department, and (3) test orchards. The test orchards are a new feature, introduced in 1918, on farms at different points in the province. In these orchards Fameuse, McIntosh and Alexander were planted side by side to ascertain the value of the two former in comparison with Alexander, a variety recognized as thriving well under New Brunswick conditions.

Considerable attention was given to the co-operative marketing of apples. These were graded and packed at a central warehouse, instead of in the orchard as formerly.

The general work of the division is to give advice to farmers in the selection and preparation of orchard sites, and in planting, pruning, grafting, and spraying. In all, over 230 orchards were visited.

## MISCELLANEOUS.

## ONTARIO FARM MANAGEMENT SURVEY.

The Ontario Department of Agriculture has compiled the information secured in the second farm management survey carried out by the director of farm surveys of the Ontario Agricultural College. The first annual survey, which was made in the township of Caledon, Peel county, on one hundred and thirteen farms, was dealt with in the report of 1917-18. The second survey was made in Oxford county, where four hundred and thirty-seven farms were examined. This county was selected because dairying is followed almost exclusively and represents cheese-making, butter-making, city dairy trade and the making of condensed milk and milk powder.

Conclusions from survey:—

1. That farm profits of the average farmer increase as the size of farm increases.
2. That many farms can be profitably increased in size by clearing and draining rough land.
3. That there are many opportunities for increasing profits without increasing the size of the farms.
4. That the greatest opportunity lies in increasing returns from live stock.
5. That this increase can be most effectively obtained by better breeding methods.
6. That an increase in crop yields brings greater profits, but only if accompanied by keeping up and improving the quality of the live stock.
7. That efforts should be made by dairymen to produce at least 40 per cent of their milk in the six winter months.
8. That the best organized business for the average dairy men is that which gives about 70 per cent of the total revenue from dairy cattle and the balance from other sources, crops, hogs, horses, etc.
9. That the dairy business offers large returns for men specially fitted for specializing in high producing cows.

Details upon which the above conclusions were based are presented in tabular and descriptive form in a pamphlet issued by the Ontario Agricultural College.



## SESSIONAL PAPER No. 15a

## SILO DEMONSTRATIONS IN BRITISH COLUMBIA.

During the year of 1918 silo demonstration work has been carried into two districts where the farmers have not yet realized the advantage of using silage to feed their live stock. Three modern demonstration silos were put up and demonstrations in filling were given in the presence of well attended meetings.

Greater interest is being shown by the farmers in the feeding of silage to beef stock, and silos were built in several places to provide succulent feed for cattle which as a rule have been fed principally on dry hay during the winter. Several of the larger stock ranches are at present considering the advisability of using silage when wintering their stock.

There has been a large increase during the last year in the number of silos in the province. The system which has been followed during the last four seasons by the live stock branch of the Department of Agriculture of assisting in the building and filling of silos in new districts with funds provided under the Agricultural Instruction Act has introduced them into the majority of the farming communities. Up to the present time sixty-three silos have been built and fifty-one filling demonstrations held. Ontario is the only province in Canada that has more silos per capita than British Columbia.

## DEMONSTRATION FARMS AND EXPERIMENTAL STATIONS.

## FORT WILLIAM STATION.

The Northern Ontario Plant Breeding Station at the Industrial Farm, Fort William, carries on a useful line of work provided for under the Agricultural Instruction Act. Considerable new work was undertaken in 1918 and included, by plant breeding, the production of several varieties of strawberries especially suited for Northern Ontario.

Among the importations of nursery stock were specimens introduced from Asia. The tree fruits were increased by the planting of the Hibernian apple and Dartt crab to be used for top-working. Hybrid varieties of apples and plums raised in the nurseries of the Prairie Provinces and the northern states were introduced, as well as some promising Russian pears.

A shipment of Bacurjaney apple seedlings produced from seed secured in the Caucasus Mountains in Russia were set out. These are stated to be as hardy as the *Pyrus baccata* and much superior in size and quality.

In vegetable work sufficient variety tests were made to give strong hopes that especially useful varieties of peas, celery, lettuce, beets and other classes will be developed. Steps have been taken which will probably result in obtaining some improved varieties of potatoes.

This station is doing an important work in the distribution of planting material. Distribution which commenced last year comprised forest-tree seeds, forest-pulled seedlings, fruit trees, fruit seeds, vegetable seeds and flower seeds which were sent to different customers. This distribution, it is expected, will grow rapidly with the coming years.

## KEMPTVILLE DEMONSTRATION FARM.

The progress being made in the development of the demonstration farm in connection with the school at Kemptville, Ont., is given in the chapter dealing with agricultural colleges and schools in this report.

## ALBERTA DEMONSTRATION FARMS.

A number of demonstration farms were inaugurated by the Alberta Department of Agriculture some years ago. They were located at widely separated points so as



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to represent as nearly as possible the varied conditions of soil, climate and rainfall. At three of the farms, schools of agriculture have been located, and it was the intention eventually to make each farm the centre for such a school. The grant has assisted chiefly in the purchase of stock, including representative animals of dairy and beef breeds, which are maintained for breeding purposes. During the year under consideration the purchases made were chiefly for the purpose of strengthening the beef herds. To this end a number of registered Shorthorns were put on the farms at Sedgewick, and of Herefords at Claresholm.

#### DEMONSTRATION FARM AT KILLARNEY, MAN.

The Demonstration Farm at Killarney, Man., consisting of seventy-five acres was intended originally to be developed as a permanent horticultural station. This plan has since been deviated from to a certain extent. While a portion of it has been planted to fruit, the remainder is being operated as a general farm to demonstrate the value of good cultivation, seed selection and crop rotation.

Only sufficient live stock is kept to satisfy the needs. An effort is being made to develop a good strain of Berkshire hogs. In poultry, plans are being made to establish a farm flock of one hundred hens of a bred-to-lay strain of Plymouth Rocks.

The buildings consist of a house, barn, machinery shed, poultry house and ice house. Particulars of these and the fruit plantation are given in the report for 1915-16, pages 60, 61. The seasons of 1917 and 1918 were rather unsatisfactory both for cereals and horticulture on account of climatic conditions.

#### BRITISH COLUMBIA DRY-FARMING STATIONS.

To endeavour to prove the value of the Nicola and Northern Lillooet districts, the provincial Government in 1913 decided to establish a dry farming station at Quilchena and at 105-Mile House. These farms were started under the supervision of the lands department and were directed by that department until 1917, when they were transferred to the Department of Agriculture, and current outlay charged to the grant. During the period that the lands department was supervising these farms, extensive experimental work was carried on with different grains and grasses, and valuable results were obtained.

When the Agricultural Department took over the two stations it was considered better policy—for the time being at any rate—to endeavour to make these farms self-supporting. It was expected that by stocking up the place with sheep, hogs, or whatever best returns could be realized from, sufficient profits could be made to offset the expense incurred through experimental work. Both farms are already fairly well stocked with sheep, the 105-Mile farm having about eighty head and the Quilchena farm about 150 head. Cattle will also be kept as soon as sufficient fodder can be raised on the place. It is hoped this line of farming will place these farms on a more productive and paying basis.

#### FEDERATION OF WOMEN'S INSTITUTES OF CANADA.

A Dominion-wide women's organization to be known as the Federation of Women's Institutes of Canada was formed in Winnipeg in February. The new organization constitutes a federation of provincial women's rural organizations known as Women's Institutes, Homemaker's Clubs and Home Economic Societies, assisted by the Agricultural Instruction Act. The constitution provides that the federation shall consist of three representatives from each province, two of them to be chosen by the provincial convention and the third to be the superintendent for the province, or his or her appointee. A federal convention is to be held once a year and Toronto was chosen as the convention city.

The objects of the Federation of Women's Institutes are to unite the influence of Canadian women to promote educational, moral, social and civic measures, and to



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bring into communication and co-ordination the various women's institutes and like organizations throughout the Dominion; and further, to be a clearing house for institute activities and information, and to outline and encourage nation-wide campaigns in the interest of the whole people, including homemaking, child welfare, education and community efforts. The organization is to be strictly non-partisan and non-sectarian.

VETERINARY COLLEGES.

It is universally conceded that live stock is an absolute necessity to successful agricultural development through assisting to maintain soil fertility and by converting the cheaper materials grown on the farm into higher-priced finished food products. In the achievement of this, veterinary skill and science materially assists by safeguarding the health of live stock and preventing losses through various ailments and diseases.

In recognition of this service there are now established veterinary colleges maintained by the governments of all countries for the training of young men for the veterinary profession. In Canada there are two essentially veterinary colleges in existence. One is the Laval Veterinary College at Montreal, maintained by the Quebec Department of Agriculture. At this institution the instruction is given in French. The other is the Ontario Veterinary College at Toronto, maintained by the Ontario Department of Agriculture for English-speaking students. Both of these institutions have university affiliation and receive aid from the Dominion Government under the Agricultural Instruction Act.

The opportunities existing in Canada to young men entering the veterinary profession are regarded as excellent. Apart from the ever-increasing field for veterinary surgeons throughout the Dominion, there is a constant demand for trained veterinarians as inspectors in the Health of Animals Branch of the Dominion Government as executive officers, investigators and qualified meat inspectors.

There are increasing demands for veterinarians in the various departments of agriculture, as inspectors of stallions for enrolment and for other branches of live stock work and instruction. Many cities and towns are in need of properly trained veterinarians to inspect dairies and abattoirs and to supervise the production of milk, meat and other food products. The field of veterinary science so far has only just touched the fringe of its possibilities and offers many opportunities for the young man of worthy ambitions.

THE ONTARIO VETERINARY COLLEGE.

A few years ago the course at the Ontario Veterinary College was extended from three to four years. In recognition of the extended training, the regular course will now lead to the degree of B.V.Sc. instead of V.S., as was formerly the case. For the degree of D.V.Sc. a supplementary examination by the University of Toronto (with which the veterinary college is affiliated) is necessary.

In the autumn of 1918, on the resignation of the Principal, Dr. E. A. A. Grange, who had acted in that capacity since the retirement of the late Dr. Smith, the founder of the institution, Dr. D. C. McGilvray, of the Manitoba Agricultural College, was appointed to the principalship.

The institution is now recognized by the United States Department of Agriculture as well as by the American Veterinary Medical Association, and it is the policy of the Ontario Department of Agriculture to make it one of the foremost institutions of the kind on the continent.

VETERINARY SCHOOL, MONTREAL.

The new veterinary hospital in connection with this school—the construction of which has been made possible by the Agricultural Instruction grant—was formally opened on December 10, 1918. It is expected that the new building, with its modern equipment, will greatly facilitate the work of instruction.







SESSIONAL PAPER No. 15a

STATEMENTS, BY PROVINCES, OF THE EXPENDITURE OF THE AGRICULTURAL INSTRUCTION GRANT FOR THE FISCAL YEAR  
ENDED MARCH 31, 1919.

PROVINCE OF ONTARIO—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

No.	Classification	Balance April 1.	Grants.	Refunds.	Total Credits.	Expend- ture.	Credit Balance.
		\$   cts.	\$   cts.	\$   cts.	\$   cts.	\$   cts.	\$   cts.
1	O. A. C. capital expenditure	5,873 40	135,000 00		140,873 40	3,613 75	137,259 65
1b	Salaries and additions to staff	3,953 94	15,000 00	100 00	19,053 94	18,260 60	793 34
2a	Agricultural School, Kemptville (capital)		60,000 00		60,000 00	55,642 87	4,357 13
2b	Agricultural School, Kemptville (income)	47,702 95	20,000 00	5,297 89	73,000 84	3,208 84	69,792 00
3	Agricultural representatives (including balances under O. A. C. capital, \$115,000; of stock and feed judging, \$2,462 76)	117,507 87	21,630 29	848 10	139,986 26	138,772 57	1,213 69
4	Household science extension work		1,500 00		1,500 00	1,116 45	383 55
5	Co-operation and markets	385 33	7,000 00	500 00	7,925 33	7,705 67	229 66
6	Demonstrations in vegetable growing	58 16	7,000 00	200 00	7,738 96	7,283 65	455 31
7	Stock and seed judging courses and institute work		672 97	530 75	1,203 72	1,203 72	
8	Women's institute work	1,799 00	5,000 00	1,289 02	8,088 76	7,996 40	92 36
9	O. A. C. short courses (acre profit comp.)	561 03	200 00	1,429 60	3,990 63	1,776 10	2,214 53
10	Lectures on horticulture	430 07	500 00		930 47	367 86	562 61
11	Demonstrations in growing and handling fruit	100 00	2,000 00		2,100 00	1,296 37	803 63
12	Demonstrations vegetables, New Ontario	367 16	4,500 00	100 00	4,967 16	4,499 16	527 80
13	Horticultural Experimental Station	1,578 31	2,000 00		3,578 31	2,510 45	1,067 86
14	Drainage work	446 28	2,500 00	306 45	7,274 73	4,605 35	2,669 38
15	Demonstration work on soils	697 54	3,500 00	500 00	4,697 54	4,480 02	217 52
16	Demonstrations in bee-keeping	616 14	500 00		1,116 14	891 08	225 06
17	" growing and handling corn	73 06	3,500 00	100 00	3,673 06	3,476 15	196 91
18	Demonstrations in live stock and poultry	883 67	2,000 00		2,883 67		2,883 67
19	Elementary agricultural education	28,998 14	40,000 00	42 08	69,040 22	60,561 42	8,478 80
	Short courses for fall fairs	902 42			902 42	55 30	847 12
	Agricultural aid account						
	Dairy demonstrations	15 81			15 81		15 81
	Dairy survey	215 51			215 51		215 51
	Live stock in Northern Ontario	3,427 84			3,427 84		3,427 84
	Milking Shorthorns	1,856 11			1,856 11		1,856 11
	Miscellaneous	1,869 24			1,869 24		1,869 24
	Ontario veterinary college additional land	12,819 93			12,819 93		12,819 93
		257 142 85	336,303 26	11 293 89	584,740 00	362,363 94	222,376 06
	Less agricultural aid balances						20,204 44
	Balance agricultural instruction account						202,171 62



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PROVINCE OF QUEBEC—BALANCE OF GRANT, 1917-18.

SUMMARY Statement, April 1, 1918, to June 30, 1918.

No.	Classification.	Balance April 1, 1918.	Expenditure
		\$	\$
1	Schools of agriculture.....	13,764 11	13,764 11
2	School of veterinary science, building extension.....		
3	Breeding.....	4,844 01	4,844 01
4	Poultry.....	3,482 63	3,482 63
5	Bacon.....		
6	Horticulture.....	9 99	9 99
7	Experimental orchards.....	2,621 64	2,621 64
8	Dairying.....	157 96	157 96
9	Agricultural representatives.....	5,287 93	5,287 93
10	Seed.....	9 95	9 95
11	Bee-keeping.....	1 40	1 40
12	Drainage.....	337 92	337 92
13	Maple products.....	2,465 79	2,465 79
14	Short courses.....	4,471 13	4,471 13
15	Experimental union.....		
16	Elementary agricultural education.....	2 06	2 06
17	Domestic science.....	6,144 80	6,144 80
18	School children's exhibits.....	21 26	21 26
	Totals.....	43,662 58	43,662 58

PROVINCE OF QUEBEC—GRANT OF 1918-19.

SUMMARY STATEMENT, April 1, 1918, to June 30, 1919—15 months.

No.	Classification.	Grant.	Expenditure
		\$ cts.	\$ cts.
1	Schools of agriculture.....	75,000 00	75,000 00
2	School of veterinary science.....	2,000 00	2,000 00
3	Animal husbandry.....	9,000 00	9,000 00
4	Poultry.....	18,000 00	18,000 00
5	Horticulture and entomological work.....	31,000 00	31,000 00
6	Experimental and demonstration farms.....	4,000 00	4,000 00
7	Dairying.....	5,000 00	5,000 00
8	Agricultural representatives.....	67,000 00	67,000 00
9	Seed selection.....	9,000 00	9,000 00
10	Bee-keeping.....	7,000 00	7,000 00
11	Drainage.....	6,000 00	6,000 00
12	Maple industry.....	4,000 00	4,000 00
13	Short courses.....	9,113 76	9,113 76
14	Experimental union.....	2,000 00	2,000 00
15	Elementary agricultural education.....	8,000 00	8,000 00
16	Domestic science.....	10,000 00	10,000 00
17	School children's exhibits.....	2,000 00	2,000 00
		271,113 76	271,113 76



SESSIONAL PAPER No. 15a

MACDONALD COLLEGE.

STATEMENT of receipts and disbursements for year ending March 31, 1919.

April 1, 1918—Debit balance forward.. . . . .	\$ 3,104 43
Receipts—	
Agricultural Instruction Grant.. . . . .	25,000 00
	<hr/>
	\$21,595 57
Disbursements—	
Animal husbandry.. . . . .	\$3,428 86
Biology.. . . . .	1,000 00
Cereal husbandry.. . . . .	1,799 99
Chemistry.. . . . .	583 35
Horticulture.. . . . .	554 55
Household science.. . . . .	3,702 31
Poultry.. . . . .	3,325 58
Veterinary science.. . . . .	1,500 00
Rural school.. . . . .	5,811 68
Short course.. . . . .	49 50
General.. . . . .	1,512 89
Demonstrator, Shawville.. . . . .	325 52
	<hr/>
Debit balance, March 31 . . . . .	\$ 1,998 66

OKA AGRICULTURAL INSTITUTE.

EXPENDITURE of Federal Grant, 1918-19.

Enlargement of college building, annual payment.. . . . .	\$ 5,000 00
Teaching staff, salaries and allowances.. . . . .	10,711 00
Administration, salaries and wages.. . . . .	3,952 96
Insurance, heating and lighting.. . . . .	2,871 64
Experimental fields.. . . . .	884 41
Board of students.. . . . .	1,900 00
Poultry.. . . . .	\$ 100 00
Bee-keeping.. . . . .	100 00
Horticulture.. . . . .	200 00
Preserving and canning.. . . . .	100 00
Animal husbandry, herd improvement.. . . . .	1,200 00
Student excursions to various farms.. . . . .	400 00
	<hr/>
Supplies and equipment.. . . . .	938 17
	<hr/>
Allocation.. . . . .	25,910 00
	<hr/>
Debit balance . . . . .	\$ 2,479 20

SCHOOL OF AGRICULTURE, STE. ANNE DE LA POCAHIÈRE.

EXPENDITURE of Federal Grant, 1918-19.

Building extension, annual payment.. . . . .	\$ 6,000 00
Salaries and allowances teaching staff.. . . . .	9,000 00
Insurance, heating and lighting.. . . . .	1,009 23
Allowance for maintenance of students.. . . . .	2,338 41
Poultry.. . . . .	200 00
Demonstration plots.. . . . .	500 00
Library and publications.. . . . .	400 00
Laboratory expenses.. . . . .	1,248 38
Incidentals.. . . . .	360 00
	<hr/>
	\$21,886 02



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PROVINCE OF MANITOBA—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

No.	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expend- iture.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	Agricultural representatives.....	7,731 84	8,113 11		15,844 95	12,091 49	3,753 46
2	Dairy work.....	3,049 68	6,000 00		9,049 68	5,184 57	3,865 11
3	Poultry work.....	2,152 23	5,000 00		7,152 23	1,909 81	5,251 42
4	Boys' and girls' clubs.....	114 47	19,000 00		19,114 45	13,817 29	5,297 16
5	Short courses.....	3,571 81	16,000 00	2,059 90	21,631 71	21,494 94	136 77
6	Home economics.....	301 13	15,000 00		15,301 13	14,386 75	914 38
7	Soil analysis.....	1,000 00	1,000 00		2,000 00	697 20	1,302 80
8	Bee-keeping.....	387 19	2,000 00		2,387 19	1,478 22	908 97
9	Killarney demonstration farm.....	213 05	4,000 00	838 25	5,051 30	4,537 82	513 48
10	Contingencies and miscellaneous.....	248 76	1,000 00		1,248 76	1,111 37	137 39
	Totals.....	18,770 14	77,113 11	2,898 15	98,781 40	76,700 46	22,080 94

PROVINCE OF SASKATCHEWAN—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

No.	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expend- iture.	Dr. Balance.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	<i>College of Agriculture.</i>							
1	Staff salaries, research, etc.....	6,717 22	21,476 16		28,193 38	27,978 55		11,214 83
2	Women's work, etc.....	5,500 00	5,500 00		11,000 00			
	<i>Instruction and Demon- stration.</i>							
3	Co-operative work and marketing.....	197 29	6,000 00	534 64	6,551 93	6,723 13	171 20	
4	Animal husbandry, etc.....	4,128 67	6,000 00		10,128 67	4,657 62		5,471 05
5	Dairying.....	3,745 22	6,000 00		9,745 22	2,440 55		7,304 67
6	Field husbandry and weed control.....	5,029 21	6,000 00		11,029 21	8,066 20		2,963 01
7	Demonstration teams.....	928 24	1,000 00		1,928 24	921 42		1,006 82
8	Agricultural represent- atives.....	10,452 66	1,476 16		11,928 82	54 00		11,874 82
9	Veterinary short courses.....	234 70	500 00		734 70			734 70
10	Junior extension work.....	1,180 45			1,180 45	1,180 45		
	<i>Primary Agricultural Education.</i>							
11	Agricultural instruction in schools.....	13,946 11	25,000 00		48,946 11	32,967 31		15,978 80
12	School fairs.....	2,506 11	1,976 16		4,482 27	525 20		3,957 07
13	Agricultural school ships.....		800 00		800 00			800 00
	Totals.....	64,265 88	81,728 48	354 64	146,649 00	85,514 43	171 20	61,305 77



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PROVINCE OF ALBERTA—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

Number	Classification.	Balances April 1, 1918.	Grant 1918-19.	Transfers.	Total Credits.	Expendi- ture.	Credit Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	<i>Schools of Agriculture.</i>						
1	(a) Maintenance.....	9,439 00	35,000 00		44,439 00	43,073 67	1,365 33
	(b) Equipment. ....	668 22	3,500 00		4,168 22	1,544 39	2,623 83
	<i>Demonstration Farms.</i>						
2	Maintenance.....	233 74	8,000 00	(1) 834 98	9,068 72	8,216 43	852 29
3	Publicity.....	1,765 47	2,500 00		4,265 47	2,747 81	1,517 66
4	Women's work. .... Dr.	204 64	7,500 00		7,295 36	7,205 82	89 54
5	Agricultural representatives..... Dr.	2,373 44	10,000 00	(2) 2,377 90	11,236 76	8,748 28	2,488 48
				(3) 1,232 30			
6	Micellaneous.....	919 47	465 62		1,385 09		1,385 09
	Demonstration train ..... Dr.	2,008 60		(3) 2,008 60			
	Dairy (competition).....	3,379 03					
	Dairying (special instruction).... Dr.	138 13		(3) 138 13			
	Interest.....	1,982 60					
		13,662 72	66,965 62	6,591 91	81,858 62	71,536 40	10,322 22
	Accrued interest from Aug. 1, '18.	395 30					
		14,058 02					

- (1) Transferred to demonstration farms from "Dairy Shorthorn Herd," under Agricultural Aid Account 1912-13, per authorization of March 14 and April 9, 1919..... \$ 834 98
- (2) Transferred to agricultural representatives—  
 Balance April 1, 1918 ..... \$1,982 60  
 Accrued Interest..... 395 30 2,377 90
- (3) Dairy competition, transferred to—  
 Dairy instruction..... 138 13  
 Demonstration train ..... 2,008 60  
 Agricultural representatives..... 1,232 30 3,379 03



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PROVINCE OF BRITISH COLUMBIA—GRANT OF 1918-1919.  
SUMMARY Statement, April 1, 1918, to September 30, 1918.

Classification.	Balances April 1.	Grant (part).	Refunds.	Total Credits.	Expen- diture.	Dr. Balance.	Cr. Balance.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Instructors and Agricultural Representatives.....Dr.	1,115 85	6,000 00		4,884 15	5,746 81	862 66	
Field Crop Demonstration Stas.....Dr.	647 34	3,000 00	1,268 45	3,621 09	4,847 79	1,226 70	
Horticultural Demonstration Stas .....	1,721 13			1,721 13	1,330 33		390 80
Poultry.....	948 82		893 07	1,841 89	988 06		853 83
Alfalfa.....	500 00			500 00			500 00
Silo Demonstrations.....	767 11		50 00	817 11	1,408 37	591 26	
Drainage.....	775 16			775 16			775 16
Seed.....	3,640 47		589 83	4,230 30	709 76		3,520 54
Dairying.....	1,285 12			1,285 12	1,317 49	32 37	
Bee-Keeping..... Dr.	894 12	1,000 00		105 88	2,655 66	2,549 78	
Field Crop Competitions.Dr.	265 27		755 00	489 73	181 20		308 53
Boys' and Girls' Clubs .....	511 05		83 00	594 05	1,190 01	595 96	
Fruit Packing Schools.....	985 00		227 00	1,212 00	1,123 59		88 41
Market Work.....	1,249 94		241 66	1,491 60	341 10		1,150 50
Publications.....	1,089 11		28 75	1,117 86	2,606 88	1,489 02	
Pathological and Entomolo- gical Investigations. ....	861 14		57 16	918 30	1,675 43	757 13	
Weed Investigations.....	1,358 20			1,358 20			1,358 20
Elementary Agricultural Education.....	3,515 72			3,515 72			3,515 72
Miscellaneous.....	553 51			553 51	618 27	64 76	
	16,838 90	10,000 00	4,193 90	31,032 80	26,746 75	8,169 64	12,461 69

## SUMMARY Statement, October 1, 1918 to June 30, 1919.

Classification.	Balance Sept. 30.	Grant (Bal.)	Refunds.	Total Credits.	Expendi- ture.	Dr. Balance.	Cr. Balance.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Instructors & Representa- tives.....	776 33	4,000 00		4,776 33	10,760 11	5,983 78	
Field Crop & Dry Farming {		100 00					
		*4,000 00	3,146 16	7,246 16	5,189 61		2,056 55
Seed Work.....		1,000 00	885 25	1,885 25	972 08		913 17
Field Crop Competition....		2,000 00	520 00	2,520 00	235 00		2,285 00
Silo Demonstrations.....		3,000 00		3,000 00	1,724 84		1,275 16
Drainage Demonstrations...		500 00	46 40	546 40			546 40
Hort. Demonstration & Com- petitions.....		3,000 00		3,000 00	1,038 08		1,961 92
Fruit Packing & Pruning Schools .....		2,000 00		2,000 00	3 00		1,997 00
Poultry.....		1,000 00	1,109 29	2,109 29	2,095 58		13 71
Dairying.....		3,000 00	412 96	3,412 96	2,498 05		914 91
Bee-Keeping..... {		1,500 00					
		*1,200 00	574 10	3,324 10	3,746 16	422 06	
Boys' & Girls' Clubs.....		1,500 00	87 25	1,587 25	1,291 07		296 18
Agricultural Journal & Pub- lications.....		5,000	148 70	5,148 70	4,837 09		311 61
Pathological & Entomologi- cal Work.....		3,000 00		3,000 00	2,922 72		77 28
Miscellaneous.....		599 06	1,276 71	1,875 77	817 28		1,058 49
Agricultural Instruction in Schools.....	3,515 72	20,000 00		23,515 72	20,000 00		3,515 72
University of B.C.....		8,000 00		8,000 00	1,195 30		6,804 70
	4,292 05	64,449 06	7,166 82	76,947 93	59,325 97	6,405 84	24,027 80

\*Payments withheld from Grant of 1917-18.



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PROVINCE OF NEW BRUNSWICK—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

Number	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expendi- ture.	Dr. Balance.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	<i>Agricultural Schools.</i>							
	Equipment.....		500 00		500 00			500 00
	Salaries and maintenance.....	329 83	2,400 00	8 00	2,737 83	2,383 61		354 22
	<i>Instruction and Demon- stration.</i>							
	Agricultural represent- atives.....	4,816 83	8,860 00		13,676 83	12,076 56		1,600 27
	Bee-keeping.....	103 49	2,700 00		2,803 49	2,960 91	157 42	
	Soils and drainage.....	321 70	3,700 00	290 57	4,312 27	4,933 50	621 23	
	Horticulture.....	371 72	6,000 00	284 95	6,656 67	6,394 56		262 11
	Short courses.....	934 96			934 96	406 50		528 46
	Live stock.....	622 84	6,300 00		6,922 84	7,502 13	579 29	
	Dairying.....	776 08	4,600 00	4 20	5,380 28	5,666 90	286 62	
	Poultry..... Dr.	24 67	4,300 00		4,275 33	5,234 13	958 80	
	Fertilizers.....	1,258 89	500 00		1,758 89	607 35		1,151 54
	Entomology.....	23 57	1,300 00		1,323 57	1,117 52		206 05
	Agricultural societies....	1,344 92	1,600 00		2,944 92	2,985 63	40 71	
	Women's institutes.....	97 97	6,000 00	32 94	6,130 91	6,398 84	267 93	
	Miscellaneous..... Dr.	59 94	550 80		490 86	52 40		438 46
	<i>Elementary Agricultural Education.</i>							
	Agricultural instruction in public, high and normal schools, household sci- ence, teacher training, grants and allowances..	5 85	13,000 00	84 70	13,090 55	15,443 38	2,352 83	
	School fairs.....		1,800 00		1,800 00	318 13		1,481 87
		10,924 04	64,110 80	705 36	75,740 20	74,482 05	5,264 83	6,522 98

PROVINCE OF PRINCE EDWARD ISLAND—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

Number.	Classification.	Balances April 1.	Grant.	Refunds.	Total Credits.	Expenditure	Credit Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	Building Account ....	132 27	2,825 00		2,957 27	2,918 89	38 38
	<i>Instruction and demon- stration.</i>						
1	Director and district representative.....	370 20	5,500 00		5,870 20	5,846 64	23 56
2	Short courses ..	141 96	360 00		441 96	388 65	53 31
3	Drainage and soils....	298 39	1,000 00	15 00	1,313 39	1,297 90	15 49
4-5	Live stock and dairy- ing. ....	1 88	2,900 00	52 13	2,954 01	2,901 88	52 13
6-9	Poultry, bee-keeping, horticulture and co- operative marketing.	59 45	300 00	90	360 35	340 09	20 26
10	Women's institutes....	277 59	3,510 00	75 00	3,862 59	3,448 42	414 17
11	Elementary agricult- ural education.....	473 19	11,500 00		11,973 19	11,943 03	30 16
12	Miscellaneous and con- tingencies..	350 21	3,914 22		4,264 43	2,377 54	1,886 89
		2,105 14	31,749 22	143 03	33,997 39	31,463 04	2,534 35



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PROVINCE OF NOVA SCOTIA—GRANT OF 1918-1919.

SUMMARY Statement, April 1, 1918, to March 31, 1919.

Number	Classification.	Bal- ances April 1.	Grant.	Refunds.	Total credits.	Expen- diture.	Dr. Balance.	Dr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	<i>College of Agriculture.</i>							
	Science building — interest and sinking fund.....	1,786 67	8,000 00	By trans. 2,817 38	12,604 00	10,942 56	.....	1,661 44
	Salaries and maintenance....	16 16	23,000 00	.....	23,016 16	23,016 16	.....	
	<i>Demonstration and In- struction.</i>							
	Agricultural representatives. ....		12,500 00	To trans. 28	12,500 00	13,878 43	1,378 43	
	Short courses, including main- tenance of demonstration buildings and allowances to students.....	300 00	1,000 00	To trans. 322 21	1,300 00	1,155 59	.....	144 41
	Dairying.....		4,500 00	Refund. 262 84	4,762 84	5,459 09	696 25	
				To trans. 46 81				
	Poultry ..		1,500 00	" 93 94	1,500 00	1,473 05	.....	26 95
	Bee-keeping-education work. ....		300 00	" 81 36	300 00	133 70	.....	166 30
	Drainage demonstrations and soil surveys.....		1,800 00	" 252 88	1,800 00	1,826 00	26 00	
	Soil and fertilizer demonstr. ....		1,700 00	" 35 85	1,700 00	1,188 64	.....	511 36
	Field crop demonstrations....		1,500 00	" 192 19	1,500 00	1,479 50	.....	20 50
	Fruit-growing.....		2,000 00	" 12 17	2,000 00	1,993 37	.....	6 63
	Women's work-institutes and clubs, domestic sciences short courses and allowances....	427 17	2,000 00	" 1,212 36	2,427 17	1,997 45	.....	429 72
	Entomological work—investi- gations and education re insect pests.....		9,000 00	" 4 95	9,000 00	7,195 87	.....	1,804 13
	<i>Parliamentary Agricultural Education.</i>							
	Agricultural instruction in public, high and normal schools, teacher training, grants and allowances. ....	3,640 65	10,000 00	.....	13,640 65	10,753 29	.....	2,887 36
	School children's exhibits and competitions.....	120 05	2,000 00	.....	2,120 05	1,298 71	.....	821 34
	Contingenc. and micellaneous. Cr. bal. transferred to interest and sinking fund account..		916 00	To trans. 562 33	916 69	889 09	.....	27 60
		2,817 33						
		9,108 03	81,716 69		91,087 56	84,680 50	2,100 68	8,507 74